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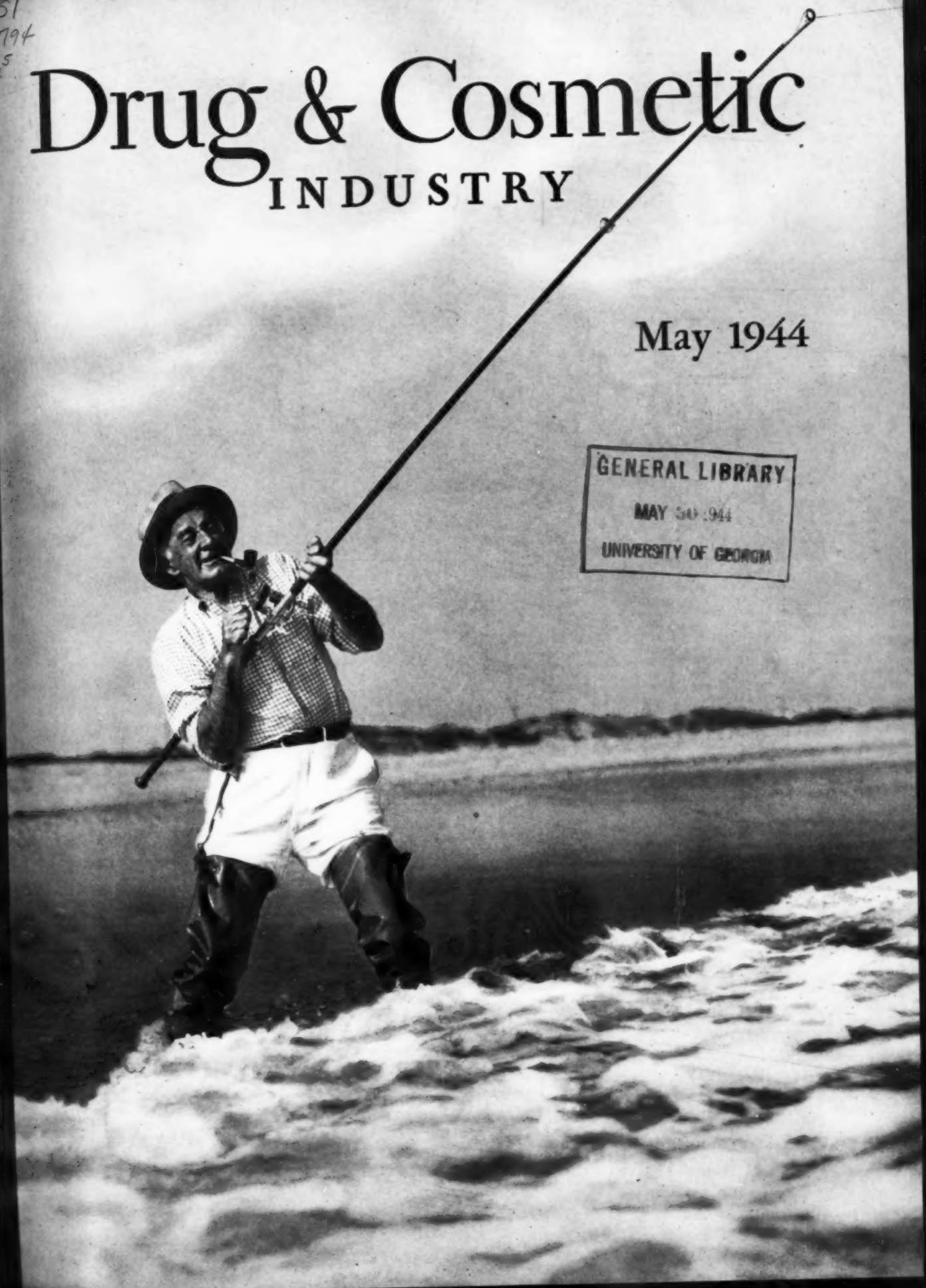
Drug & Cosmetic INDUSTRY

May 1944



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THESE ARE THE KILNS

Where the Limestone is burned to make

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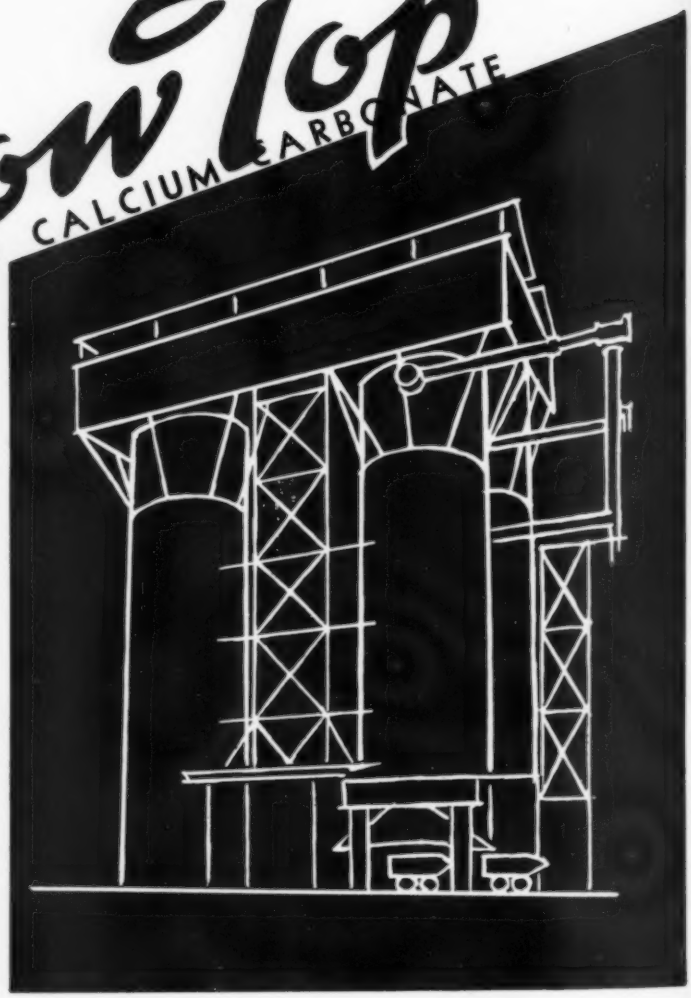

Before the calcium carbonate that nature produced can become the calcium carbonate which is Snow Top it must pass through several chemical and physical stages which change it from the dull gray or blue limestone rock, familiar to everyone, into the bright white powder of a precipitated calcium carbonate. The first of these steps takes place in the kiln where the stone is converted into lime. Limestone and coke, selected for their purity, are charged into the top of one of these tall kilns and pass slowly through it to the discharge opening at the bottom. In a short time the coke begins to burn, the stone becomes white hot, and a chemical decomposition takes place which changes the stone into lime and releases carbon dioxide gas. After about forty hours the lime has reached the bottom of the kiln and is withdrawn, ready for the next step in its progress toward becoming Snow Top. In the meantime the carbon dioxide is passing through scrubbers and purifiers which cool and clean it, and remove traces of sulfur compounds in order to make it ready for the time when it will again meet and combine with the lime to form precipitated calcium carbonate.

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Drug & Cosmetic INDUSTRY

MAY 1944

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INSIDE NEWS

MAY PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y. 1944

Sugar Chemistry To Affect Foods and Drugs of the Future

With the disappearance of sugar's international cartel, producers are asking the scientists to find new industrial uses for this basic food which, for a quarter of a century, has been too abundant to support a profitable price.

The largest American cane and beet refiners, plus the entire Puerto Rican and Hawaiian producing group, are financing a Sugar Research Foundation, with projects in leading technical schools and universities, to analyze sugar's place in man's diet, and develop new uses for sugar in chemical and pharmaceutical industries.

Sugar Starvation in Europe

From the dietary point of view, an abnormal demand for sugar in Nazi-dominated countries can be expected immediately after the war. One of the important results of lack of sugar in the diet is "ketosis", the same condition which, in its severest form, kills the diabetic. Ketones are the chemicals made by the liver from sugar and fat, and which normally circulate in the body and are converted into energy. Without sugar for the liver to work on, the liver utilizes the body's reserve fats and produces so many unusable ketones that the body is poisoned by them. Ketosis results: a wasting away of the muscles, lethargy, coma and eventual death.

In this connection, researchers are analyzing the relation between sugar and thiamine, a Vitamin B. Thiamine is essential to the proper assimilation of sugar. Research is directed at such questions as, for instance, whether sugar should be fortified with thiamine; how different diets affect the body's production of thiamine; and the specific effects of various sugar diets on disease resistance, tooth decay, and longevity.

Paint, Vitamins, Penicillin

Researchers are giving particular attention to the possibility of utilizing the carbon, hydrogen and oxygen in sugar's complex molecule (C-12, H-22, O-11 in sucrose, for instance) as "building blocks" for the synthesis of a wide variety of useful chemicals, just as science now converts coal-tar and petroleum. Already, sugar is a well-known basis for alcohol, which is itself a "sugar", as well as various solvents for lacquers and finishes. It may also prove useful in the manufacture of alkyd resins for paint and plastics, if certain chemical changes can be accomplished.

Sugar fermentation is also the present basis for many pharmaceuticals, including the widely-used citric acid; penicillin, too, is made by a special mold acting chemically on sugar syrup or molasses.

One of the principal difficulties in obtaining such products as ascorbic acid from sugar, or biotin from molasses, is the delicacy of the sugar molecule. It can be acted on only by mild substances which will not "burn it up." Such fermentation processes which might be termed "controlled oxidation" have recently proved successful in the laboratory. Much of sugar's usefulness as a raw material will depend on whether or not these ticklish processes can be carried out in large-scale commercial production.

Return To Progressive Policies

Thus, the disappearance of the type of surplus and export controls formerly exercised by the International Sugar Committee, while presenting the sugar industry's perennial problem in its acutest form, may prove beneficial in the long run. Few will question the advantages of solving a cost-price problem of this kind by creating new wealth through science, rather than by pursuing a course of static restriction. 631

"DDT" for Civilians

Civilians soon stand to benefit immensely from a warborn product — the insecticide material identified as "DDT". Chemically, DDT is said to represent Dichlorodiphenyltricloroethane. Production in the United States is even now being expanded rapidly, and small civilian supplies are expected to be available during the latter half of the year. Currently, the armed forces are consuming the entire output.

One of the principal practical advantages of DDT is reported to be the absence of obnoxious odor. Neither does it affect the mucous membranes of the eyes, ears, and throat during use. It has been proven effective in destroying flies, agricultural insects, and body lice, while being harmless to human beings and warm-blooded animals. First large scale use of DDT is reported to have been the delousing of large groups of refugees arriving in Switzerland, in which country the material was originally produced in commercial quantities.

A bright future is predicted for the material in the agricultural insecticide field, since it has been found effective against the coddling moth, a destructive apple pest. DDT is reported to be better for this use than lead arsenate, which heretofore was the standard control agent. 632

Olive Bacteria

Experience of the olive industry that seven to eight percent of salt in brines of fermenting olives is required to prevent spoilage has been confirmed by recent research. Strains of butyric acid producing anaerobes were isolated from Spanish type green olives which were undergoing abnormal fermentation and spoilage. Experimental cultures were grown to determine the conditions required to prevent growth of these undesirable bacteria. Salt up to five percent was tolerated by a number of strains and six percent by one. 633

Citrus Information

Specially prepared for canners and packers of citrus fruits and citrus products interested in facilitating fruit washing and expediting daily clean-up of processing and handling equipment, a new illustrated booklet describes successfully used sanitation and germicidal methods, de-scaling techniques and related practices. The booklet stresses extra vigilance and attention toward maintaining purity of product, safeguarding against bacterial contamination, reducing spoilage loss and retaining flavor, taste and color. It gives in detail sanitation and maintenance procedures connected with the preparation, processing or production of citrus fruits, juices, preserves, marmalades, syrups and similar products such as: Elimination of insoluble residues from soaking tanks, rollers, brushes, etc. Cleaning of sanitary fittings, pumps, pipings, cooking kettles, vats and tanks. Removing citrus pectin from spiral cooking coils . . . fruit residues, burnt-on deposits, juices, lime-scale and similar accumulations from pasteurizers and preheaters. De-scaling ammonia condensers and water-cooled compressors, steam-jacketed kettles, mechanical washing machines, etc. Steam-detergent cleaning of packing house equipment and processing machinery. 634

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"Freezing" Reports

A number of canned fruits and vegetables are not affected so far as ultimate use by the consumer is concerned if they happen to be frozen between the time they are packed and the time the consumer receives them. Some varieties, on the other hand, are affected in varying degrees. The full story on tests on 35 different canned products is available and was published recently, the result of research done at the National Canners' Association Washington Research Laboratory. If you want the whole story of how freezing may affect your product, we'll tell you where to find the full report. 635

Sardine Bacteria

Until recently there has been no detailed bacteriological survey of sardine canning comparable to the surveys that have been made for other types of canned products. Such a survey now has been made and the results are available. They show that only a small number of bacteria are normally present in and on the fish and that heat-resistant types were absent. Organisms capable of growing under anaerobic conditions occurred irregularly and were not numerous in any instance. Bacteria pickup resulting from primary salting seem to be insignificant but steaming and drying operations reduced this number to a very low level. A substantial percentage increase in the bacterial load was found during the trimming and filling operations. Conditions under which this increase vary are given. If you want full information on the survey and the recommendations included, we'll tell you where to find it. 636

Agar Research

Commercial agar, a product used in the food industries as a stabilizer and as a culture for bacteria in quality control work, has become so scarce that two laboratories of the Fish and Wildlife Service and at least a dozen state and private institutions are attempting to develop new sources of supply. Before the war 92% of the agar used in the United States was imported from China and Japan. When this supply was cut off, WPB acted to conserve existing supplies for their most essential use — as a culture medium in bacteriological laboratories. Other prewar uses included the manufacture of confections, emulsifiers, dental impression materials and laxatives. 637

Lettuce Preservative

Discoloration and deterioration of lettuce heads during shipment or storage can be inhibited by treatment with an antioxidant. 638

Edible Antifreeze

Quick frozen foods can be marked or identified in the frozen state with an edible antifreeze agent which loses its identity when the temperature rises above a certain predetermined point. 639

Technical Topics

LOW VISCOSITIES — Aluminum soap solutions of low viscosities, although comparatively concentrated, may be attained by the addition of polar organic solvents, it is stated in a recent British patent. The solutions are declared to be particularly useful in waterproofing practice. Hydrocarbon solvents such as toluol, benzol, and petroleum naphtha, combined with an ammonia derivative, may be used as the polar solvent. 640

"SAUSAGED" EGGS — Eggs, packed in a rubber casing like sausages, is a new invention for safe shipping. The sealing machine patent has been assigned. 641

METALLIC ENAMELS — Enamelled finishes similar in appearance to gold, brass, copper, and bronze are reported possible through the use of a new formulation incorporating vermiculite. In the process described, the vermiculite is sintered, then pulverized and sieved, and the powdered material applied to the surface being enamelled before the final firing operation. 642

PRESERVATIVE — A new preservative for drugs, cosmetics, and pharmaceuticals is available. The product easily soluble in water and odorless is now used to preserve lotions, emulsions, gum solutions and other products easily subject to destruction by mold and fermentation. 643

"SHEET" CITRUS — Reports come from Middle East that experiments are being made to produce dehydrated sheets of orange and lemon for export. 644

PYRETHRUM REPLACEMENT — A new type roach powder to replace pyrethrum products, now unavailable because of war demand by the Armed Forces for mosquito control, has recently been put on the market. The active ingredient is one of the thiocyanates, and this killing agent is dispersed on an inert extender such as talc or pyropphyllite. 645

DIVERSIFIED USES — A new product which is said to possess excellent qualities as a flavoring vehicle, as a plasticizer and chemical intermediate for food processing, and in cosmetic and pharmaceutical manufacture, has just been placed on the market. 646

WEEVIL PROTECTION — Extensive tests from Australia show that magnesite powder is effective for 12 months in protecting stored grain from the two commonest weevils. Dolomite and diatomaceous earth also showed promise. 647

PERILLA — Formerly imported from Asia, perilla has been successfully cultivated in the midwest. It yields an oil, used for its quick drying qualities, in paint, linoleum, etc. 648

AFRICAN FROGS — By use of hormones, African frogs, the species used in pregnancy tests, can now be bred in the United States, overcoming a shortage in this country caused by war. 649

SULPHUR — A leading American company is operating a new plant which extracts six tons of 99% pure sulphur daily in the purification of a daily rate of 54 million cubic feet of coke oven gas. 650

TOMATO OIL — Oil from tomato seeds, used in Italy for soap, represents a huge potential in American canneries where most of the seed and pulp is not processed or used. 651

DICYCLOPENTADIENE — Production from the front runnings obtained in the distillation of benzol is described in a recent British patent. Difficulties heretofore involved in the distillation of the "fronts" so as to isolate the dicyclopentadiene may be overcome, it is claimed, by distilling the mixture with an excess of water. The dicyclopentadiene passes over with the water at ordinary pressures. Crystallization then occurs when the aqueous distillate drops to normal room temperature. 652

"B" IN BEER — Riboflavin and nicotinic acids, two components of the vitamin B complex, are found in appreciable amounts in beer, recent British investigations have shown. There is reasonable assumption that it contains appreciable amounts of lecotin, pantothenic acid and inositol. It is pointed out that brewing research in the future may possibly modify malting and mashing conditions so as to further improve the vitamin content. 653

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquiries to the original source of the article. Write to National Can Corporation, 110 East 42nd Street, New York City. Please mention the number at end of article— also name of the magazine you saw it in.

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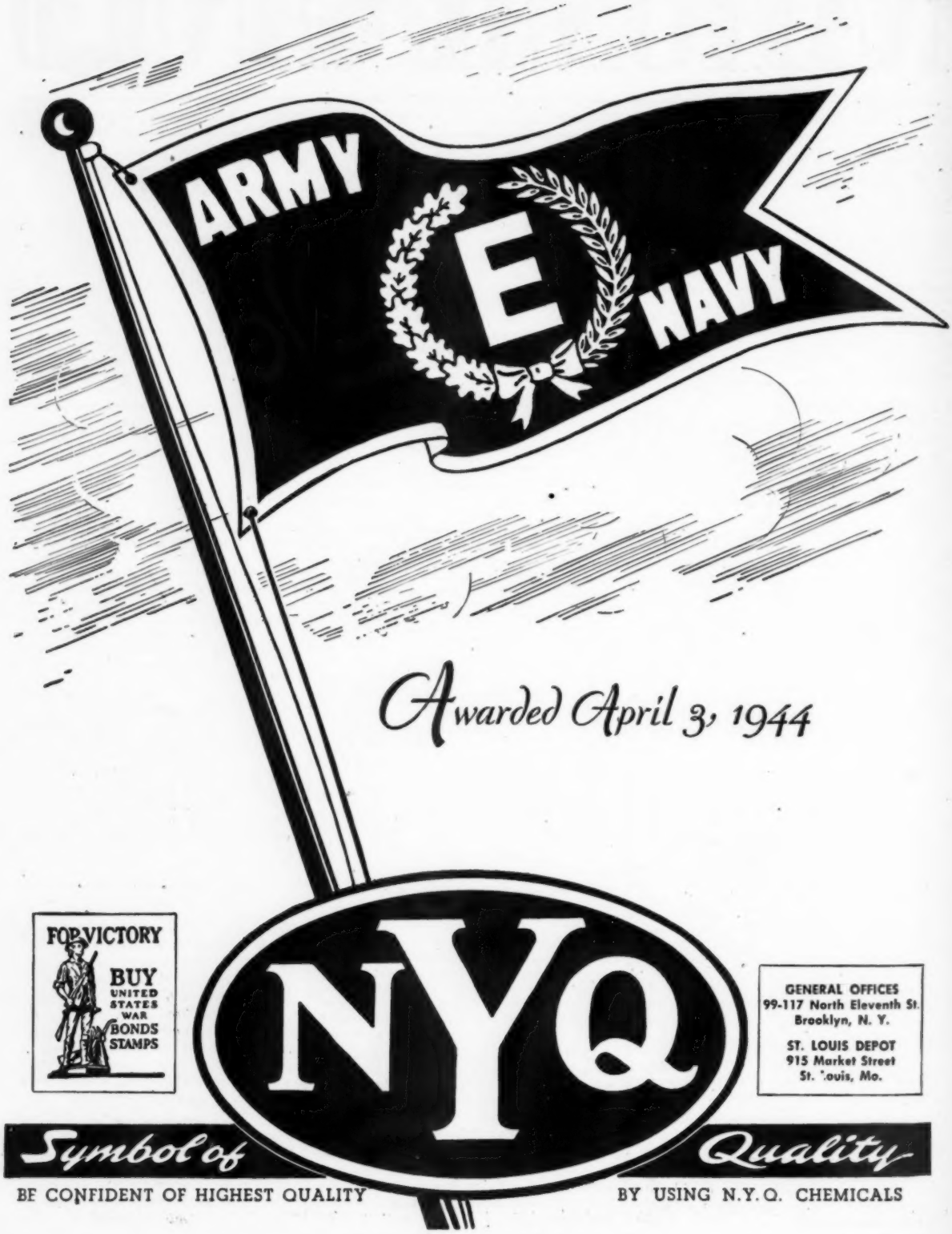

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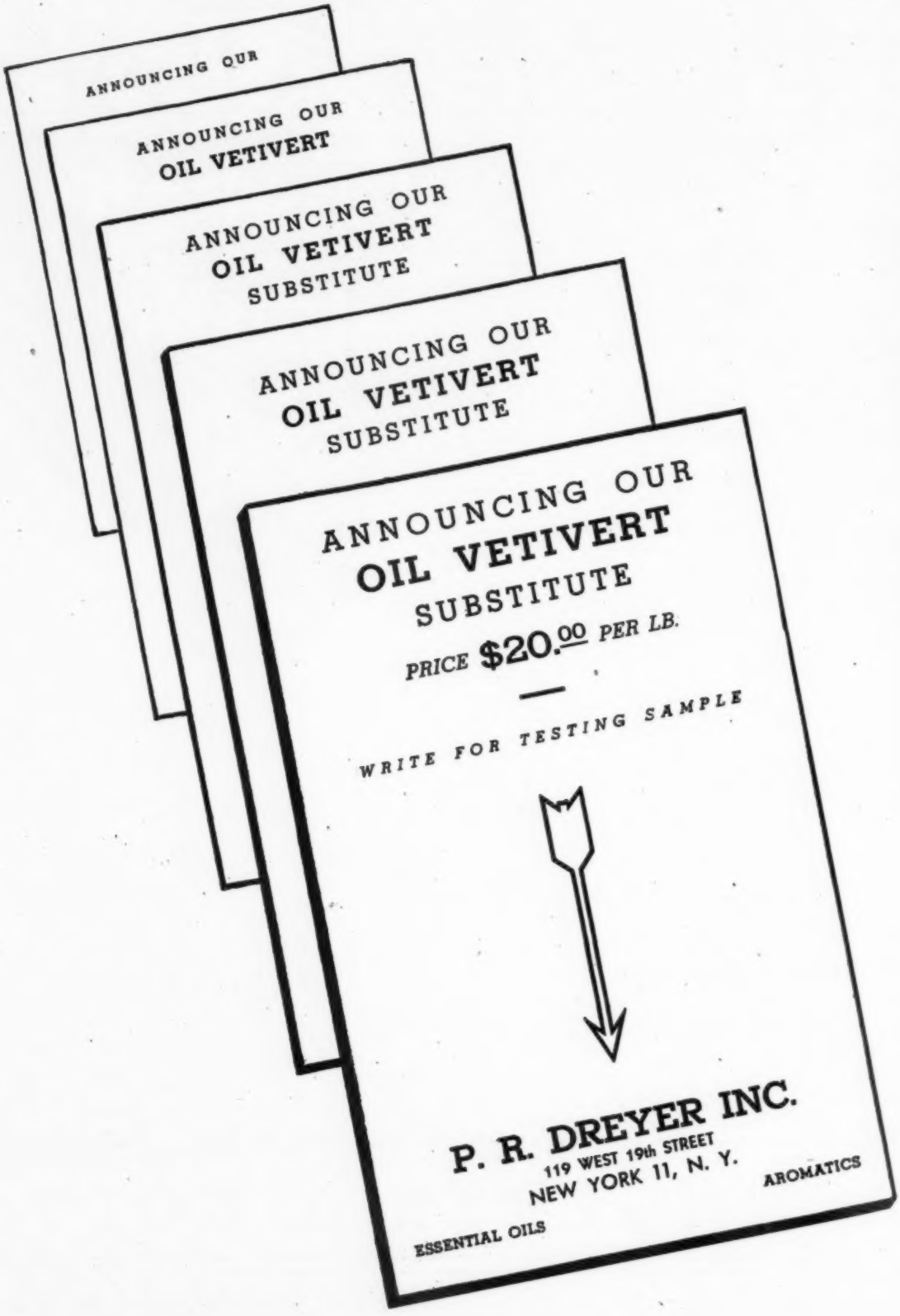
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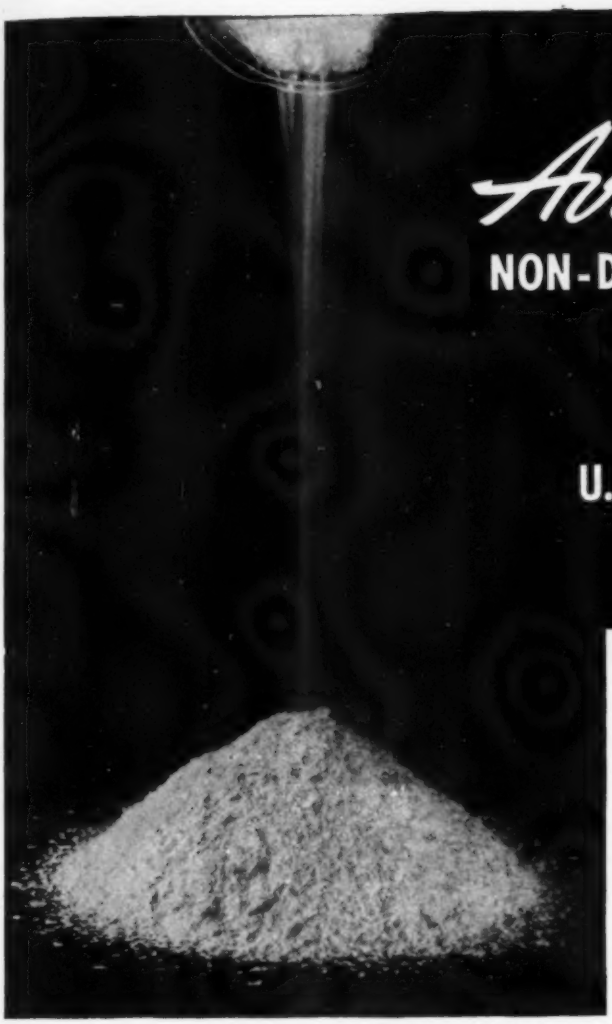

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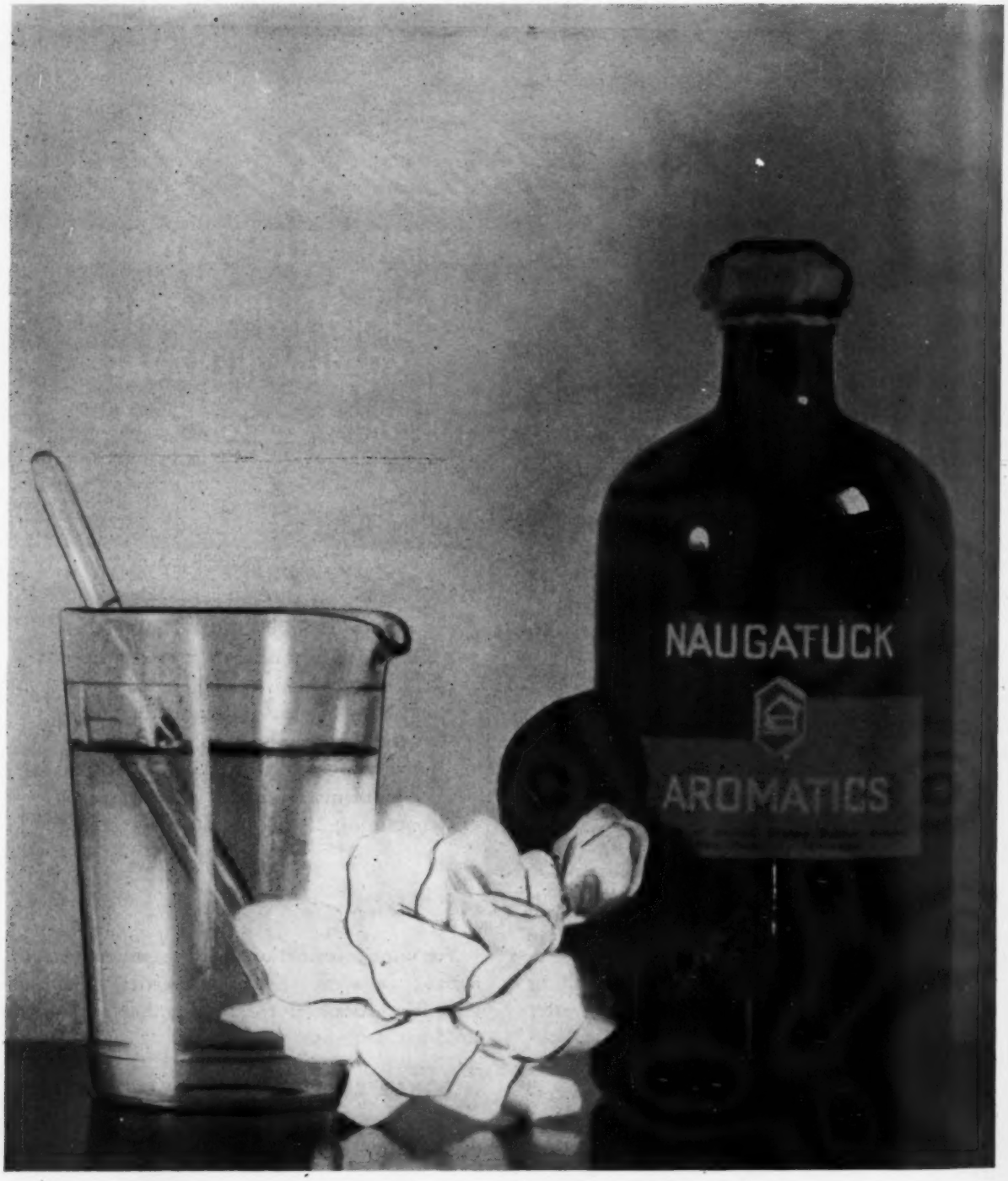

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The disease had grown progressively worse for over a year before the Sulfadiazine treatment was started with one gram doses by mouth every four hours. A week later the quantity was cut to 1 Gm. four times a day. This dosage was maintained for the duration of the treatment, 120 consecutive days.

Two Weeks Required

It was fully two weeks before any noticeable improvement in the lesions could be observed. However, in the ensuing weeks, the abscesses disappeared and the scars actually dissolved, leaving the skin practically in a normal condition after physician and patient had almost despaired.

The urine and blood, checked at frequent intervals, remained normal during the treatment.

SULFADIAZINE has demonstrated its unusually high effectiveness and low toxicity in the treatment of pneumonia, pneumococcic infections, and hemolytic streptococcus and staphylococcic infections. That's why its popularity as "The Drug Of Choice" for these uses is mounting steadily.

Endorsed by the Surgeon General's office for the armed forces, Sulfadiazine, it is conservatively estimated, has been employed in the treatment of more than 6,000,000 cases in the comparatively short time since its introduction.

Now that Calco is able to supply this famous chemotherapeutic agent for civilian use, it is available to all ethical pharmaceutical manufacturers. It is the drug of choice to meet the demands of the increasing market for sulfas.

Pharmaceutical Department
CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
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Other CALCO Products:

Sulfapyridine U.S.P.
(and Sodium Monohydrate)
Nicotinamide U.S.P.
Nikethamide
Sulfanilamide U.S.P.
Cinchophen N.F.
Neocinchophen U.S.P.
Sulfathiazole U.S.P.
(and Sodium Monohydrate)
Mandelic Acid U.S.P.
Methylene Blue U.S.P.
(Powder—Crystals)
Calcium Mandelate U.S.P.
Glutamic Acid HCL
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(For Veterinarian Use)

ARMY E NAVY

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Just as a man is known by the company he keeps, a company is known by the clients it serves—regularly! Among Carr - Lowrey clients are many of the leading manufacturers of drugs, cosmetics, food and household products in America.

The thing that makes this significant, however, is a glance at our order books . . . which show that in most cases every one of these concerns have become regular Carr-Lowrey customers.

That we have served so many so satisfactorily for so long ought to be indicative of our ability to serve you with equal understanding and competence.

If your specification sheet for postwar selling carries the inscription *"glass containers,"* we shall appreciate the opportunity to work with you and for you in the development of a smartly designed package that will help you hold customers, win new customers, please all customers!

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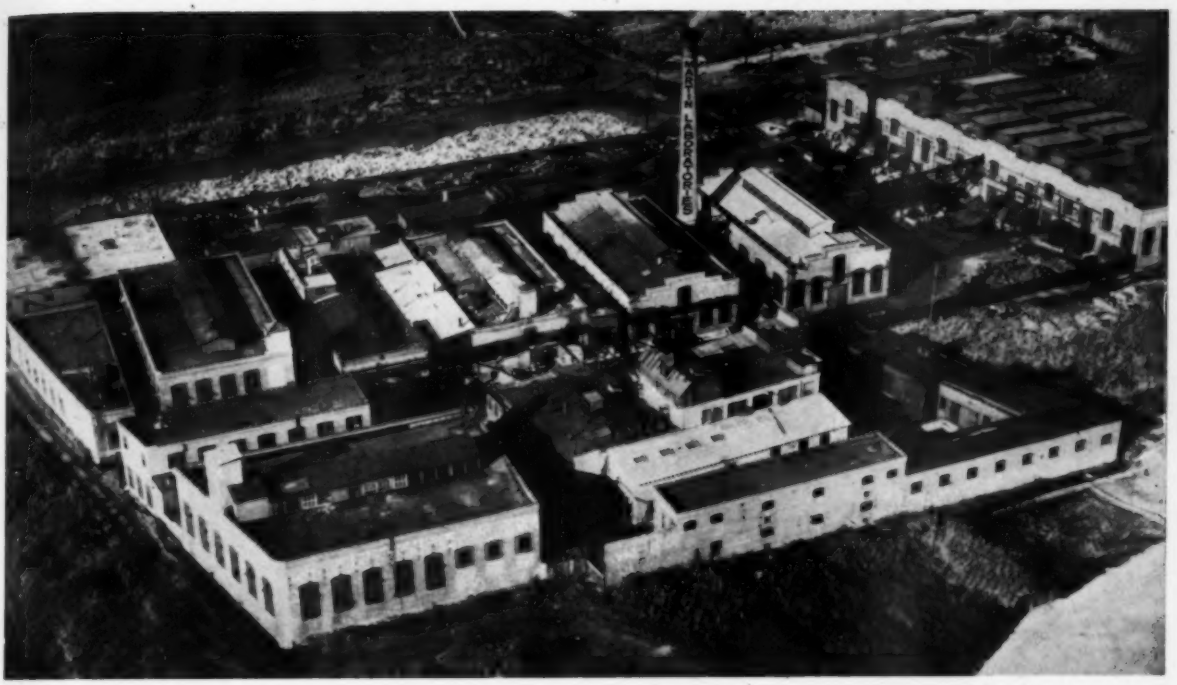

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Science in the Service of Industry, Health and Beauty

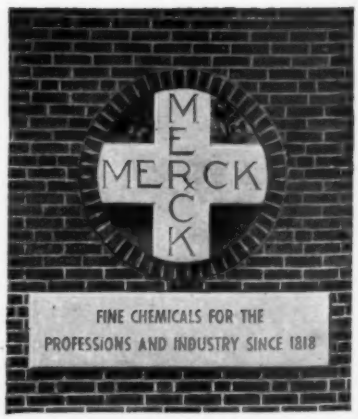
ARCHIMEDES *IN MODERN DRESS*

LEGEND has it that Archimedes, the most famous mathematician of Greek Antiquity, once took a bath in a vessel which overflowed, and thereby he discovered the principle of the determination of specific gravity by buoyancy, *i.e.*—a body immersed in a liquid is buoyed up by a force equal to the weight of liquid it displaces.

Today, a Merck analytical chemist, operating modern, sensitive balances, determines specific gravity to a degree of accuracy undreamed of during the era of Archimedes or for centuries afterwards.

This exacting, delicate test for specific gravity is typical of scores of operations performed daily by Merck chemists, working in modern and spacious laboratories. Many tests, some intricate, some simple though important, are necessary to meet the standards which have been established for each of more than 1,200 products bearing the Merck label. There are tests for the quality of raw materials—a series of control tests throughout each step of the manufacturing process—finally, the exacting tests on the finished product before it is released for use.

Because of these modern control facilities, the manufacturer who uses Merck Chemicals does so with complete confidence in their purity, uniformity, and reliability.



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Today, many more oils than ever before carried the "Made in U.S.A." label are being produced in large quantities here, while the odor, flavor and characteristics of numerous others have been matched, *through scientific manufacture,* in the MM&R laboratories to enable American industry to maintain product flavor and odor identity.

In this and a hundred other ways, MAGNUS, MABEE & REYNARD, INC. is serving American industry and America's sons at war. MM&R Essential Oils, *the very same pharmacists use in compounding doctors' prescriptions,* serve wherever America's fighting men go.

MM&R Flavor Oils add good taste; *flavor everything from tooth paste to lipsticks.* MM&R Perfume Oils provide odor personality to a host of products, while MM&R Deodorants neutralize the undesirable odors of many basic ingredients.

MM&R can be of service to you in solving, perfuming and flavoring problems for products of today . . . *and tomorrow!*

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Just off the press...

In this book, we take pleasure in submitting all the literature which has appeared in domestic and foreign journals on the suitability and value of dl—*(racemic) menthol, particularly as compared with the laevo (U.S.P.) variety. It has been our purpose to present all the major scientific literature dealing with the pharmaceutical properties and the uses of menthol and its isomers. In order to adhere strictly to the original context, we have published all German articles in that language, with summaries in English.*

This valuable only-one-of-its-kind book, "Synthetic Menthol," is available to pharmaceutical manufacturers and other users of menthol, upon request.

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QUALITY COSMETICS

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Leading cosmetic manufacturers have long standardized on SONNEBORN White Oils and Petrolatums . . . convincing evidence of the unsurpassed Quality, Purity and Stability of these highly refined ingredients.

A few of the end uses of successful products containing SONNEBORN White Oils or Petrolatums are illustrated. There are many others.

The broad research facilities of the SONNEBORN laboratories, backed by 64 years of refining experience, are available for aid in current production problems and in the development of new cosmetics for postwar markets.

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TYPE I: *Medium Consistency—White Protopet—Yellow Protopet and other colors*

TYPE II: *Soft Consistency — White Fonoline — Yellow Fonoline*

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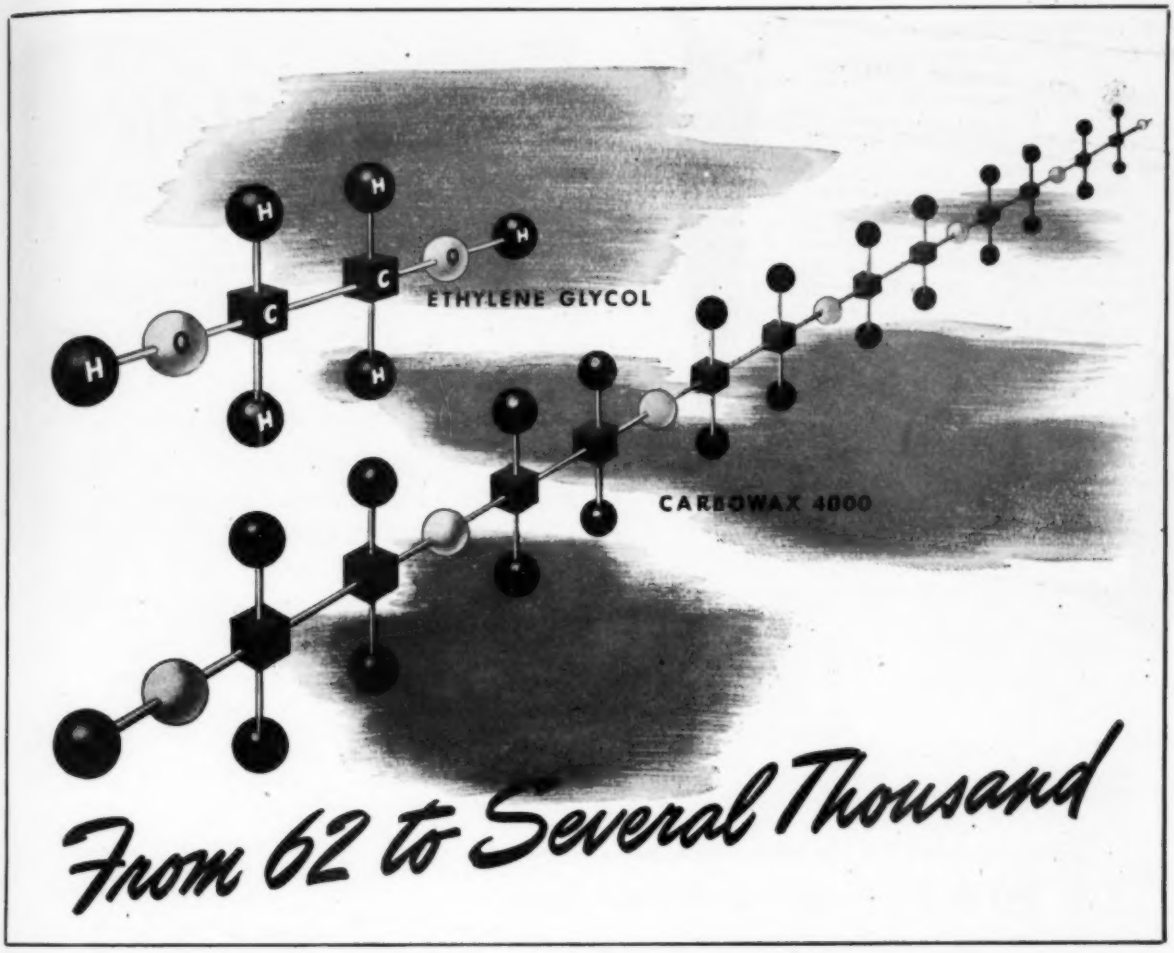

From 62 to Several Thousand

THE two molecules pictured here are smallest and largest in the family of glycols produced by Carbide and Carbon Chemicals Corporation. With molecular weights from 62 for liquid Ethylene Glycol to several thousand for wax-like Carbowax compound 4000, the family consists of 5 simple glycols and numerous polyglycol mixtures. These chemicals are so important that some of them are now restricted to essential war applications.

The glycols have distinctive family traits: water solubility, a wide range of hygroscopicities, low vapor pressures, high boiling points, and the ability to lower the freezing point of water.

Glycols are good solvents for certain gums and resins; propylene glycol, particularly, is an excellent solvent for certain antiseptics and other chemicals of pharmaceutical importance.

Carbowax compounds are especially useful as bases for water-soluble cosmetic creams and therapeutic ointments. In addition, Carbowax compounds are used in hair dressings and conditioners, and in "no-rub-off" white shoe dressings.

Carbide and Carbon Chemicals Corporation was the first chemical company to develop large-scale production of glycols. Our chemists and engineers have also pioneered the development and production of 12 other important chemical families . . . including alcohols, ethers, amines, and ketones . . . useful raw materials for many industries.

Today we are producing in commercial quantities more than 160 synthetic organic chemicals . . . and more than 40 of these in tank car quantities. After the war these versatile chemicals will be available in greater quantities than ever before, and many new compounds with them.

For further information about the use of these chemicals, write to us.

SOME OF THE GLYCOLS WE MAKE

Ethylene Glycol
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PRODUCERS OF SYNTHETIC ORGANIC CHEMICALS

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ATLAS POWDER COMPANY
Wilmington 99, Delaware

Industrial Chemicals Department February, 1944

Atlas Emulsifiers: Arlacel C, G-1165 and G-1500

The Atlas products described in this booklet have been tested as replacements for absorption bases and for lanolin. They have been found to give superior creams in many respects

One major purpose of the absorption base or lanolin is to provide the proper emulsifiers for the ingredients in the finished cream.

The Atlas materials described are quality emulsifiers of high efficiency. Used as primary emulsifiers, they form water-in-oil emulsions. Used as assistant emulsifiers in emulsions of the opposite type (oil-in-water), they lend stability and richness. In themselves, they are excellent cosmetic materials, free from diluents, and possessing inherent emollient properties.

These Atlas materials can be used to extend or replace lanolin or absorption bases. They can be used in existing formulas. They are easy to use and give increased stability, even when acids and salts are present.

ABSORPTION BASE REPLACEMENT

Absorption bases, used in cold creams, tissue creams, all-purpose creams, cleansing creams, emulsion base tonics, etc., generally form W/O emulsions. Atlas G-1165 and Atlas Arlacels are highly efficient W/O emulsifiers. Relatively small amounts of these may be used to replace part or all of an absorption base. To avoid undue alteration of the solids content of existing formulas, petrolatum, mineral oil, or wax may be added. A simple, typical cleansing-cold cream formula employing absorption base is presented in Table 1, together with three formulas in which part or all of the base is replaced by Atlas products. Formula 2 illustrates the replacement of half of the absorption base by G-1165 or Arlacel C and petrolatum. In formulas 3 and 4 the base is completely replaced.

Let ATLAS Help You Make Lanolin Go Four Times As Far

Here's a typical formula to show how you can quadruple your production—using the same quantity of lanolin—merely by adding readily available Atlas materials.

Original Formula		*Revised Formula*
20 lbs.	LANOLIN	20 lbs.
None	ATLAS MATERIALS	20 lbs.
40 lbs.	PETROLATUM	200 lbs.
40 lbs.	WATER	160 lbs.
100 lbs.		400 lbs.

Figure it out for yourself. You'll want more information, of course. Write today for your free copy of the new Atlas bulletin. Valuable data. Formulas.

S-T-R-E-T-C-H Your Lanolin Supply

With Atlas materials, you can—

1. Use your present techniques.
2. Use your present formulas, slightly modified.
3. Get the same type emulsion (W/O).
4. Assure excellent stability—even when acids and salts are present.
5. Keep production at high levels, with readily available Atlas products.

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I am primarily interested in extending / replacing

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☐ Lanolin as an emulsifier for:
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Type of Mixing Equipment

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TITLE
COMPANY
STREET STATE
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Arlex: Reg. U. S. Pat. Off.

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"Stop, the Army wants to sell us back its surplus."

KEEPING POSTED

The Newer Drugs

THE newer products upon which lengthy discussions have been published in recent times, were discussed in "capsule" form recently before the Connecticut Association for the Advancement of Professional Pharmacy by Dr. Madeline Oxford Holland, who describes the present era in medical practice as "The Age of Organic Synthetics."

Two new medicinal agents of the sulfa group, sulfamerazine and sulfapyrazine, promise to render obsolete the popular drugs of today, such as sulfathiazole and sulfadiazine, according to Dr. Holland. Sulfamerazine is effective in pneumococcic, meningococcic, hemolytic streptococcic, and gonococcic infections; it is more rapidly and more completely absorbed from the gastrointestinal tract than sulfadiazine or sulfathiazole, and is excreted more slowly, permitting swifter attainment of a high therapeutic blood level and insuring maintenance over a longer period of time, resulting in more economical treatment.

Sulfapyrazine possesses therapeutic value similar to sulfadiazine against beta-hemolytic streptococci and pneumococci; it possesses the advantages of smaller dosage to obtain effective blood levels and lesser toxicity; also it may be equally or more effective than sulfaguanidine and succinylsulfathiazole in bacillary dysentery.

The really newest chemotherapeutic agent is diasone which seems to promise effectiveness against tuberculosis.

There are many instances where the sulfa drugs prove ineffective. Either the drugs are inactivated by pus, serum or other natural inhibitors, or the infectious organisms develop a resistance. This problem has been solved through the discovery of penicillin and gramicidin. Penicillin is an able supplement to the sulfa drugs. To understand the relationship imagine a ruler with a major microorganism disease at each inch mark. The sulfa drugs represent a ribbon covering from one end to the six inch mark. The sulfa drugs thus far discovered are effective against pneumonia, streptococcal and gonorrheal infections and many others. However, there are some spots in these first six inches where the drugs are not effective, and there remain the last six inches. Included in these are osteomyelitis, bacterial endocarditis and others heretofore almost invariably fatal.

Penicillin represents another ribbon on the ruler blanketing the sulfa drug ribbon almost entirely in those spots where the sulfa drugs are ineffective, and covering up to the nine inch mark. Here were acute osteomyelitis, chronic gonorrhea, endocarditis, influenza and good results are being reported even in syphilis.

Dermerol, a new synthetic analgesic, is comparable to morphine in its analgesic powers but not so likely to cause addiction. It possesses antispasmodic properties similar to atropine, and does not possess the constipating properties of morphine. It is believed that dermerol will replace morphine in 90 to 95 per cent of the cases where an analgesic is required. Withdrawal symptoms are less severe than those caused by morphine withdrawal.

Totaquine in a dosage of 10 grains three times daily for 7 days is almost as effective as quinine in malaria. Quinacrine hydrochloride, or atabrine, is an effective antimalarial, superior, *in some ways, to quinine*.

Aluminum hydroxide, long used in hyperacidity, is now generally used in gastric and petic ulcers because an alkalosis cannot develop during its use; it does not disturb digestion nor does it change to any degree the pH of the digestive juices in the stomach and intestines.

The so-called "minor" vitamins, particularly of the B complex, should attain great importance. For example, biotin, one of the water-soluble factors in B complex, may show greatly increased use in the future although its significance is only guessed at today.

Inositol, another minor B complex factor is believed to be the basal nutrient for the growth and proper maintenance of animal hair, which brings in a relationship with pantothenic acid, and possibly a value in human therapy.

Vitamin P, or citrin, is an oxidation reduction enzyme from citrus peel. It exerts beneficial effect upon the state of the capillaries, decreasing fragility and preventing localized hemorrhages. It has also been found valuable in hemorrhagic purpura, hypertension, psoriasis, and hematuria with kidney inflammation.

Folic Acid, or vitamin B_c, causes a marked growth increase in rats, dispels an experimentally-

developed leucopenia and dysentery in animals.

Hexestrol and octofollin, two of the newest estrogenic substances, are in some ways superior to estradiol and stilbestrol, being of tremendous value in disorders of the menopause, senile vaginitis and pruritis, suppression of lactation and other ovarian disorders.

Dicoumarin, a new coagulent, is presented as a suitable replacement for heparin, also a recently introduced coagulent which replaced sodium citrate for this purpose. Dicoumarin acts in the human blood stream, while heparin acts *in vitro*. Heparin is of value particularly in hematuria, cerebral hemorrhage and hematoma, while dicoumarin is employed in various hemorrhages, purpura, epistaxis and ecchymoses.

Various fractions obtained from living cells, which fractions were observed to possess some control over cellular metabolism, are called "biodynes" from the words bios (life) and dyne (force). It has been found possible to stimulate in normal cells, respiration, growth, or glycolysis of cells simply by the addition of the specific biodyne fraction for the particular function. Remarkable results are said to have been achieved in treatment of burns, less time being required for healing, sepsis being absent, and there being no scarring and only minimum of pain. Biodynes are available for use in burn therapy.

Yeast and Stams

BACK to the time when Fleischmann's yeast was recommended by word of mouth as being good for boils or pimples, these little yeast cakes which sold for two cents in any grocery store, were used for another purpose than the baking of bread in the home. Later, when it was realized that yeast was vitamin B complex, the product was merchandised as a vitamin product. The other important vitamins were then added to yeast, and the product was widely promoted through newspaper, magazine, and radio advertising as an excellent vitamin preparation. During the years that the drug manufacturers were developing and promoting their tablets and capsules of vitamin concentrates, Fleischmann's yeast continued to be promoted unchanged. Then, a comparatively short while back, Standard Brands—the parent company of Fleischmann—entered the vitamin concentrate market with Stams—multi-vitamin and mineral tablets—and with Stan-B.

Standard Brands, through its Fleischmann division, is an old name in vitamins, having conducted vitamin research for twenty-two years and having long supplied drug manufacturers with a large part of their vitamin requirements. We well remember some fifteen years ago calling on research chemists at the Fleischmann Laboratories, housed in that beautiful building on Grand Concourse in the Bronx, and discussing vitamins A, D, and B.

However, the introduction of these new vitamin and mineral tablets placed this company in the questionable position of marketing one vitamin product through the grocer and the other through the druggist. And while the company's position with the grocer is firm based upon a long history as sellers of food products, the company had practically no standing with the druggist. And it is well known that winning the favor of the druggist is not easy, and the multitude of vitamin products on the market and the keen competition in the vitamin field makes the winning of the druggists' cooperation for a new vitamin product just that much more difficult.

However, Standard Brands are taking steps to convince the druggists that they are in the drug field with both feet and that they intend to allow nothing to interfere with the cooperation that will give to the druggists. As an indication of this, it was recently decided by the company to stop promotion of Fleischmann's Yeast as a vitamin product, all promotional efforts being concentrating on the tablets which are sold through the druggists. In our opinion, this move will not only help Standard Brands win the cooperation of the druggists, but it will also aid other sellers of vitamin concentrates by removing much of the competition furnished by a relatively low cost vitamin preparation sold through the grocers.

Essential Oil Advisory Committee

THE War Food Administration has named an essential oil advisory committee to serve under A. L. Kalish, chief of the Essential Oils Section, Special Commodities Branch, Food Distribution Administration, WFA. Members of the committee are: F. G. Buehler, vice-president of George Lueders & Co.; Gerard J. Danco, Gerard J. Danco, Inc.; F. T. Dodge, president of Dodge & Olcott; F. W. Heine, Compagnie Duval; Walter H. Jelly, president of Walter H. Jelly & Co.; Dr. H. J. Kohl, president of Norda Essential Oil and Chemical Company; Dr. Eric C. Kunz, president of Givaudan-Delawanna, Inc.; Percy C. Magnus, president of Magnus, Mabee & Reynard, Inc.; R. R. Webb, treasurer of W. J. Bush & Co.; H. P. Wesemann, vice-president of Fritzsche Brothers.

Lower Cost for Grain Alcohol

DEVELOPMENT of a new fermentation method which increases the yield and thereby lowers the cost of alcohol produced from grain was recently announced at the annual Chamber of Commerce Chemurgic Conference by Dr. Leo M. Christensen, director of chemurgic research at the University of Nebraska. Experiments with the new process have been completed and the cost of alcohol from grain has been cut to 10 to 12 cents a gallon. Until now, Dr. Christensen stated, alcohol produced from grain has cost about 5 cents a gallon more than alcohol produced from molasses or petroleum, but with the new process it "will be able to hold its own in competition with other industrial alcohols." The new process will result in production of a quart more alcohol to a bushel of grain than could formerly be produced.

Ceiling on Menthol

A SPECIFIC price ceiling of $15.00 per pound, duty paid, f.o.b. any port of entry, has been placed upon natural menthol by OPA. This will clarify a messy situation which was created by each seller being ceiled at his particular selling price, and buyers being allowed to pay any price which they chose to pay. This meant that importers could not compete with consuming buyers who kept outbidding each other for available supplies. The only requirement necessary to make the new ruling effective is to convince exporters to sell to importers in this country at the price which OPA has fixed. For no one knows for certain that other countries will not pay more than this country's ceiling price for available menthol.

Fair Trade Prices Rule

FAIR Trade prices have been ruled in New Jersey to take precedence over OPA ceiling prices in the reversal of the decision in the case of Helena Rubinstein vs. Charline's Cut Rate, Inc. On September 11, 1942, Chancellor Stein ruled that OPA prices were controlling and therefore that a retailer whose ceiling under OPA was under that of the minimum fair trade price, was legally obligated to observe his previous OPA ceiling price and consequently was not bound by the fair trade act. Now this decision has been reversed by the highest court in New Jersey and the fair trade prices are controlling in that State. This brings New Jersey into conformity with New York in which state a similar decision was handed down some time ago.

The Court of Errors and Appeals of the State of New Jersey, in its decision, said in part:

"In creating OPA Congress did not intend to put its stamp of approval upon unfair trade practices by permitting violators of a State fair trade law to profit at the expense of those who in good faith complied with its provisions.

"The difficulty is one of defendant's own making; it is a consequent of their own wrongful acts. First principles of policy and justice forbid that defendants shall continue to profit from their wilful disregard of the State statute. It is not open to them to invoke the Federal rule as justification for the perpetuation of the original wrong.

"Plainly, it was not designed that the 'freezing' of retail prices at the level of March 1942, should operate to the advantage of a retailer whose sales prices during that period violated the State Fair Trade Act at the expense of all retailers of the commodities in the same category who had observed the requirements of the Fair Trade Act."

Speaking of Fair Trade Acts, an interesting decision by the U. S. Supreme Court recently cancelled resale price maintenance contracts of the Soft-Lite Company, and enjoined the company from maintaining or even suggesting wholesale or retail prices for its trade-marked merchandise for the next six months because other arrangements made with the trade were in violation of the anti-trust laws.

The Vitamin A Shortage

WHILE a shortage of vitamin A is predicted by the Department of Interior due to what they claim is a depletion of the soupfin shark in West Coast waters, the story we get on this subject is somewhat different and the blame can probably be placed on the doorstep of the OPA along with a lot of other matters such as peppermint oil and menthol. According to the fish and wildlife service of the Department of Interior, landings of soupfin shark in February were only 30 per cent as great as they were in February, 1943, the figures being 83,960 pounds, against 280,781. Vitamin A stocks held by producers and pharmaceutical houses as of February 29 in the form of livers, liver oils, and concentrates, totaled approximately 51 trillion units, against 88 trillion units held a year previously. Then there is an explanation regarding the soupfin shark being only in the shallow waters, and also a statement that the fishermen this year intensified their efforts and used more gear but still got the poor results indicated by the above figures.

However, in the face of all this scientific and statistical information we are informed that there are plenty of livers offered to processors in the market, the only difficulty being that the processors cannot buy them for the simple reason that the OPA ceiling on poultry oil is too low at 14 cents to assure the processor of any profit. This seems to be just another instance of the fact that OPA attempts to "hold the line" result in insufficient production. Surely if livers are available with no takers at the prices asked, fishermen are not going to be bothered obtaining more livers. When the situation gets bad enough the OPA will probably do something about it. But until that time the public and many people who ought to know better will think the fish have all been caught.

Sulfa Drug Ointments

THE first actions on FDA seizures of sulfa drug ointments have been before the courts. Two types of sulfa ointments containing less than two per cent of sulfanilamide were seized and the libel charged that the labels were misleading since the first product was not an adequate treatment for diseases of the hair and scalp, and that the second ointment was not adequate treatment for Athlete's foot, and that it would not relieve the discomforts or control the conditions identified with fungus or bacterial conditions of the feet, and further that it was not a fungicide. The libel also charged that the labeling failed to bear adequate warnings to the effect that the use of the product should be discontinued if red rash appeared or if the skin condition under treatment became worse.

The Court upheld the FDA on the first count, namely, that the product was not an adequate treatment for certain conditions named in the labeling. However, surprisingly enough, the Court did not sustain FDA in its charge that the manufacturer had not included adequate warnings.

Penicillin for Civilians

PENICILLIN production is now at a point at which distribution for civilian use will be materially expanded. The new Chas. Pfizer & Co. plant is reaching its full rated monthly capacity of 40 billion units this month, and the Commercial Solvents Corporation plant has passed a monthly rate of 20 billion units, and is expected to reach its rated monthly capacity of 40 billion units during June. Pfizer, Commercial Solvents, and E. R. Squibb & Sons utilize large fermentation tanks in the manufacture of the product. When it is realized that total production in 1943 was 21 billion units, 40 per cent of which was produced in December alone, it can be seen that production has been multiplied many times. There are now 21 producers either in production or erecting plants for production, and two of those mentioned above *each* produce twice the total production of last year.

The WPB is now setting up machinery for distribution to civilians under an administrator. It is anticipated that the drug will be made available to hospitals which will serve as distribution points where doctors can obtain supplies.

A number of research staffs of large companies are working on the synthesis of penicillin. However, at least one producer who has risked a considerable amount of money in a new fermentation tank plant believes that his fermentation process will hold its own against production by synthesis if and when it comes.

Holiday for Stings

IN ORIENTING his post-war research, Dr. Clifton Ensykle was inspired in his first project by an unfortunate personal experience.

His pleasant home, situated on the outskirts of a well-known suburb, lies in a very persistent poison ivy belt. The fences are covered with the luscious green leaves, plants pop up continually in his flower beds, his victory garden gives its best to this noxious plant.

Retiring one day to the little cottage in the rear of his charming home, where he was often able to find his moments of purest contemplation, Dr. Ensykle was chagrined to find that he had exposed himself to a few leaves that had worked through the foundation. He determined to start a blitz, and like a true scientist, he started with the literature. But this gave little hope. Endless references to treatments that helped little, more references to eradication that either didn't eradicate or knocked out everything else.

It was here that Dr. Ensykle was suddenly struck with the fundamental theory that is the basis of all his present research: that the way to eradicate anything noxious is to make it valuable. He admits that this is original only in his conception of eliminating noxious things. Obviously we have practiced the theory on a broader scale for many years with our national forests, the buffalo and beaver, and many natural resources of other kinds.

Dr. Ensykle is convinced that the oil of poison ivy has somewhere hidden in its irritating capacity to blister the skin a great economic use in medicine or industry. He is now working industriously to find this use and his present experiments on certain forms of dermatitis make him no mean martyr.

If successful, he plans to let the poison ivy take over his victory garden, the flower beds, and twine all over the cottage. He will then sell harvesting rights, build certain indoor conveniences and retire to work on an even greater post-war project based on this same theory.

Boric Acid Accidents

ANOTHER accident has occurred in a hospital resulting in the death of babies who were given boric acid by mistake. In this latest instance boric acid crystals, which are similar in appearance to dextrose crystals, were used in preparing the milk formulas. Four babies died and twenty more were affected, some of whom may die. In 1927, through confusion, babies were given boric acid solution instead of drinking water, and six babies died.

While these accidents might be due to carelessness in hospital pharmacies where products are bought in large containers and then broken down in smaller containers that might not be properly labeled, it seems that something could be done to decrease to a minimum the possibility of such accidents occurring again. Steps were taken some years ago to lessen the likelihood of bichloride of mercury tablets being mistaken for other tablets even in the dark. It is well known that bichloride of mercury tablets must not be white, "they must be of an angular or irregular shape, not discoid, and when sold in small quantities, they must be dispensed in containers of a distinctive, angular shape, having irregular or roughened sides or edges,"—these are the USP requirements.

Why not change the physical characteristics of boric acid so that it could not be mistaken either in the light or in the dark? In other words why not give it a distinctive color that would be easily distinguishable, and why not give a simple, faint odor that would make it impossible for anyone to mistake it for anything else? We are not suggesting that all the boric acid of commerce be similarly treated, but specifications of this sort could be included in the USP so that so far as its use on humans is concerned, such accidents probably never would occur.

After all it did not take a great many States of the Union very long to require roach powder to be colored a Nile shade when accidents occurred due to roach powder being mistaken for flour in bakeries. As a matter of record, New York City was the first place that required that this be done. We believe that an odor could also be used in roach powder, thus making it still surer of identification.

Drug Volume and Profit

SURPRISING as it seems, SEC reports that drug manufacturers showed a lower percentage of profits for 1942 than did the chemical manufacturers. Drug manufacturers profits after taxes averaged 7.6 per cent, against 8.7 per cent for chemical manufacturers. The operating profit for drug manufacturers in 1942 was 19.1 per cent, against 22.1 per cent for chemical manufacturers. SEC estimates that drug industry sales during 1942 totaled $459,613,000, or more than double the SEC 1936 figure of $221,908,000. However, these figures are seriously open to question. In the first place, the survey is based on reports of a number of companies, and the figures given show sales of $121,998,000 for United Drug Company, against $42,277,000 for Parke, Davis & Company, indicating that the United Drug figure must include wholesale and retail sales as well as sales of company-manufactured goods. Furthermore, WPB figures give a much higher volume, namely $934,000,000 for 1943, and $492,700,000 for 1939. While it is stated that the WPB figures include essential oils and botanical drugs, a comparison of WPB figures indicate that the SEC figures are far too low, and, if they were figured accurately by considering only the sales of manufactured goods of United Drug Company at wholesale prices, they would be still lower and therefore further out of line. It would appear from conditions surrounding the WPB during its activity since the start of the war, that the WPB figures are more accurate than the SEC figures.

The sales of the reporting companies, their operating profit, and their net profit follow: Abbott Laboratories, $20,005,000, 28.5 per cent, 11.0 per cent; Allied Laboratories, $4,464,000, 17.2, 10.1; American Home Products Corp., $59,796,000, 16.9, 7.2; Lambert Company, $17,085,000, 21.4, 9.0; Merck & Co., $43,545,000, 21.2, 6.4; Norwich Pharmacal Co., $8,275,000, 22.6, 8.8; Parke, Davis & Co., $42,277,000, 34.8, 14.9; Plough, Incorporated, $6,989,000, 9.5, 5.8; Sharp & Dohme, $20,907,000, 18.6, 8.7; E. R. Squibb & Sons, $32,987,000, 16.9, 7.4; Frederick Stearns & Co., $6,371,000, 12.7, 4.3; Sterling Drug, Inc., $53,448,000, 26.6, 13.3; United Drug Company, $121,998,000, 9.3, 1.9; Vick Chemical Company, $18,379,000, 24.8, 12.0; Zonite Products Corp., $3,087,000, 15.8,7.8.

Directions for Use of Drugs

FDA is planning a sharp contraction of the latitude given manufacturers to sell their products under the so-called "Rx legend" and thereby escape the requirement of giving full directions for use. Regulations for the enforcement of section 502 (f) are being amended to permit the sale, without a doctor's prescription, of drugs and devices which can be safely and effectively used by consulting the directions on the label. Retail druggists have charged the "Rx legend" clause of the Act has been used by manufacturers as a means of escaping the provision that the labeling must carry adequate directions for use. The manufacturers merely stated on the label that the product was to be used only by or on the prescription of a physician, dentist, or veterinarian and then no directions were required.

Ben-Gay F.T.C. Dismissal

WHAT is believed to be the first instance of the dismissal of an important case occurred when the Federal Trade Commission dismissed its action against Baume Ben-Gay last month. In all other instances of this kind, some type of a Cease and Desist Order has been issued.

The Commission contended that the product contained menthol, methyl salicylate, lanolin, beeswax, and water, and proceeded against the advertising which represented that the product was of value in relieving pains of neuralgia and rheumatism, muscular aches and pains, and that it was of value in relieving congestion symptoms that accompany a cold, that it helped to clear the air passages and break up local congestion.

Some of the witnesses contended that the product, instead of relieving nasal congestion, would increase that condition, basing their statements probably on the supposition that the product would be applied directly to the nasal mucous membranes rather than considering the relief afforded by inhalation of the vapors as suggested by the manufacturer.

Witnesses for the manufacturer testified that the product would not only have a local counter-irritant effect, but it would also act upon the pain-relieving centers in the brain as a result of absorption of methyl salicylate. It has been contended that under the usual conditions of use a sufficient quantity of a drug would not be absorbed to produce systemic effects, but this testimony rules out the old theory.

"But, gentlemen, I don't want to be caried out by soldiers."

Alcohol Projects Dropped

SOME time back we discussed the possibility of production of alcohol from waste sulfite liquors from paper mills and arrived at the conclusion that it would not be undertaken for several reasons. One of the main reasons why we thought it would not take place was the great need for critical materials for other uses, as well as the probable fact that by the time the plants were ready, the need for the alcohol might have passed. However, we were wrong,—the project was approved and the plant is being erected. More recently we noted that the WPB had approved two more projects for production of alcohol,—one from sawdust, or wood waste, and the other from sweet potatoes. After the approval of the sulfite liquor plant we did not give these other projects a second thought believing that the Government would follow through any method of getting more alcohol. Imagine our surprise when the approval was later withdrawn!

Oil Man (Essential) Wants Job (Essential)

THE following application for a position may be of interest to your readers. Depth of philosophical thought stands out in many lines, though meaning in spots seems entirely lacking. Somewhere there must be a place for this man. But where?

In cassia need a copaibable man with lots of peppermint and ginger, if I mace cypress myself so, would like to cumin and cedar chief chemist. Aspic Spanish, French and Balsam Peru, but juniper-wood think I wasn't borneol here. Cajeput me in your laboratory to spearmint? I would work to give sassafrasion and camphor very little celery, because I don't caraway about that. When you cedrat and after I chamomile, you could recognacize why I have parsley college curacoas with a "marjorum curcuma labdanum" as a pimento of my work. But I wouldn't oleo resin my laurels, no, sauge is not the case. "Hyssop estragen to a star," anise my bergamotto. "Pine needles in thyme is savin nine" and "It's ylang wormwood have no turning," is what I say. Eucalyptus horsemint water but you cannot mace him drink.

I musk say also that you would find that you have never cinnamon more ambergrisious, and it's a myrrhical verbena unemployed so long. Almond say I would work fir you for vetivert lime worth, it does nutmeg any difference. Don't bay leaf you cananga me with any offer. Lemon Ho when I had bitter orange to call. It terpenes wholly on you. My thyme is at your demandarin, for I could lavender next train.

Please colophone, orris write and sandal for me carob de Rose bois where I amber rue myrtle next rent day. Ylangiously wait dill olibanum hearing from you.

With lovage,

S. N. Shiloyl, F. F. C.,

BRITISH COMBINE

SURPLUS

From almost a standing start, this country has produced the implements of war, the drugs, and other necessities fully to equip our own Armed Forces and largely those of our Allies within a span of approximately three years. The rise in production during this period has been extremely steep. Now that we have equipped all our forces and bases and those of our Allies, the rate of production must be far above the requirements for replacement of many of the things used in war. As one example, sulfa drugs were produced at something over 5,000,000 pounds in 1942, while production in 1943 was 10,000,000 pounds. The rate of production for sulfa drugs during the latter months of 1943 would produce some 15,000,000 pounds if maintained during 1944. But it is doubtful if the Armed Forces will require anywhere near such a large quantity during the time that lies ahead. Likewise we see reports of a surplus of magnesium and a recommendation is made that all restrictions be removed from its use and a plant that has not yet come into successful operation be closed down. Aluminum is being produced in far greater supply than is required for the war effort.

Production of atabrine tablets is at the astounding rate of 4,000,000,000 tablets per year. When and where this enormous quantity of tablets will ever be used is just another problem. Many observers believe that this figure is a full fifty per cent too high, claiming that 2,000,000,000 tablets per year would be closer to the amount of tablets that can be consumed.

No one can blame Army officers for being sure that they have everything that might be needed even though some of the things which they obtain are never used. Certainly no one would criticize the Army for having large quantities of gas masks and large reserves of poison gas even though gas attacks never occur in this war. Since Army officials in the course of a war are required to consider human life as a most important commodity, it is no wonder that they consider manufactured articles as expendible in any amount, and it is no wonder that they place extremely large orders for drugs or other commodities that might save human life.

However, in the course of the reckless purchasing of commodities that this frame of mind entails, huge quantities of some materials are likely to become surplus during a war. And surely, because war always ends suddenly, and the victor is well prepared to carry on the war for a much longer time, extremely large quantities of all the many kinds of commodities used in war are available when a war ends.

The sad part of procurement in this war is that goods are not only requisitioned individually by many branches of the Army and the Navy, but also by the Lend-Lease Administration for shipment to our Allies, liberated countries, and nations that we are trying to win to our side in the war. After these orders have been placed and the goods delivered to a point at which a surplus that is too big to handle is on hand, immediate disposal is the first thing that has been considered. And the method of disposal has often ignored the welfare of the industry that made it possible for the Government to obtain these goods that were believed to be so sorely needed.

A startling example of this type of disposal occurred recently when the Army decided that it wanted to get rid of 500,000 pounds of corrosive sublimate of mercury. In this instance the Army had originally ordered 1,500,000 pounds of the material, cutting this order to 1,000,000 pounds before the order had been completed. Then with only two-thirds of the original order on hand, the Army wanted to dispose of another third. That would leave on hand only one-third of the original order, and most of this material probably is still on hand since it must be expected by Army officials to last for what they believe is the duration.

In attempts to dispose of this 500,000 pounds of corrosive sublimate, a so-called advisory committee of mercurial manufacturers was called into conference with Army officials in Washington. The Army desired to sell the material back to the manufacturers who supplied it at the prices that had been paid for it. The manufacturers were not at all interested in this idea for the reason that the mercury market had declined since the material had been sold to the Government and threatened to decline still further. Furthermore, the material offered for sale by the Government was sufficient for one or two years' normal consumption in this country. In addition the material was not uniform, and while it might pass USP specifications, it was not

DISPOSAL

bought on these specifications and the degree of fineness varied widely. The manufacturers advised the Army to have the material reconverted to mercury and then add this mercury to the Government stockpile. However, an official from the Mineral and Metals Reserve was present and he stated that the stockpile was already too large and if this material were added to it some of the mercury mines would have to be shut down which was contrary to policy for some reason or other.

A striking example of the errors in procurement by the Army came to light a few months back when one branch of the Army sent out a notification that small bottles of mercury were surplus and were going to be disposed of, when at the same time another branch of the Army requisitioned the same item and bids for small bottles of mercury were requested from suppliers.

However, if we can believe what we are told, all this is to be different according to Major Joseph G. Noh, director, purchasing department, Army and Navy Medical Purchasing Department, who addressed the NWDA Spring meeting in Chicago late last month as follows:

"The plan, approved and now in effect for the disposal of surpluses, is functioning as follows: When an item is found to be in excess position, ... that amount beyond requirements is declared excess to the Surgeon General. The Medical Department then circulates surplus items among the other services of the War Department, this being done in order to establish the possibility of a conceivable use other than initially intended. A surprising number of items, particularly chemicals, are found to be needed by Chemical Warfare, Signal Corps, and Quartermaster. Items not disposed of by this circulation are offered to the Navy and ofttimes meet a timely Naval requirement. Next, a check is made of the current requirements of other war agencies such as Veterans Administration, Maritime Commission, Public Health Service, and Federal Works Agencies, for, under the plan, any of their requirements must first be filled from Medical Department surpluses. If, after these various circulations have been completed, the item surpluses have not been liquidated, they are declared surplus to the Procurement Division of the Treasury Department; not however, until they have first been approved by Headquarters, Army Services Forces, where a final check is made.

"Relatively few items, therefore, have been declared surplus by the Medical Department to the Treasury. Only those items which have become outmoded or obsolete have had to run the gauntlet of disposal.

". . . . The Medical Department is willing to assure your industry of the fullest cooperation in keeping you informed of surpluses as they occur, and of plans for disposal as they develop.

U. S. SIGNAL CORPS FROM BLACK STAR

"When the Procurement Division of the Treasury Department receives items declared surplus by various services, their first step is to circularize all governmental agencies—and there are some 2,000 on the mailing list.

"Following the screening for possible governmental use, items which would have a tendency to affect markets will be referred to the interested industry committee now organized under WPB before being finally offered for public sale."

But while this action on the part of the Army might help to ameliorate the conditions that occur during the war, it is the staggering amounts of drug products that will be available at the end of the war that are causing the greatest worry. Legislation is now before Congress for termination of government contracts and for disposal of government property. Recently Attorney General Francis L. Biddle urged amendments to this legislation to make certain that free competition prevails in the sale of such properties. Mr. Biddle does not like the language of the proposed bill providing that no sales shall be made except through "established" or "regular" trade channels. He said that while the sale of surplus property to speculators should be avoided, the construction placed on these provisions is that sales could be made only to firms already established in the business of selling particular products, or to a particular class of trade, such as wholesalers. The difficulty, according to Mr. Biddle, is that in some industries trade channels are frozen by private agreement for the purpose of maintaining artificial prices. He suggested that any concern that wishes to perform an ordinary trade function should be permitted to bid on property offered for sale. He proposed that the declared policy should

(*Continued on page 598*)

According to old writings, the Chinese were the first to employ the benefits to be obtained from the local application of sex hormones.[1] However, the modern, scientific history of hormone treatment by inunction does not begin until 1929. In that year, Zondek,[2] one of the greatest living endocrinologists, showed that follicular hormone is active percutaneously. He found that if an estrogen-containing cream is rubbed on the shaved back of a castrated mouse, the animal goes into estrus or heat. In male guinea pigs, he was able to produce growth of the breasts, and later, milk secretion by rubbing estrogenic hormones into the skin of the back.

Others followed this lead and it was soon well established by both laboratory experiments and clinical studies that systemic effects comparable to injections of estrogens could be obtained by inunction of a hormone preparation on the skin.[3,4] Both Loeser[5] and Salmon,[6] for example, found that the symptoms of ovarian deficiency could be relieved by percutaneous estrogen therapy.

Continued study along these lines soon established that on a dose for dose basis the efficacy of local estrogen therapy depended to a large extent upon the vehicle in which the hormone is applied. Thus in a series of animal experiments reported by Ito and his associates[7] in 1937, it was found that carriers for estrone showed the following order of absorption: first, 60 per cent alcohol; second, hydrous wool fat, and, third, petrolatum.

In the following year, Zondek[8] noted that the decisive factor in percutaneous estrogen therapy is the solvent and that the more readily the solvent is absorbed through the skin, the better the estrogenic hormone can exert its effects. Thus, if the hormone is dissolved in an oil or ointment, only one-seventh is absorbed through the skin, but in an organic solvent such as benzol, ether or alcohol, the whole is absorbed.

Considerable light on this phase of local estrogen therapy has been made available through the extensive work of Emmons[9] at the National Institute for Medical Research in London. In experimental studies of *systemic* responses to estrogens from various vehicles, he found that the several carriers for estrone rated as follows: in ether 24, in benzene 22, in 96 per cent alcohol 18, in 50 per cent glycerine or nut oil 3, and, in lanolin 1. By injection in oil, the response rating was 20. The synthetic hormone, diethylstilbestrol, gave parallel but considerably lower systemic effect ratings on local application from the same vehicles.

As early as 1938, Moore and his co-workers[4] had conceded that, "When hormone therapy is indicated, administration as skin ointments may prove to be the method of choice." Several hormone ointments for therapeutic use are now available commercially from leading pharmaceutical houses.

From clinical reports, it seems that sex hormone-containing preparations for application to the skin find their greatest use in treating more or less local conditions, such as small breasts, vulvular disorders, acne and others. Thus, in commenting on work done by other investigators, Emmons[9] remarked that while estrone absorbed percutaneously is able to exert its normal effects throughout the body, it tends to act more effectively at the site of inunction if responsive tissue is there present, at any rate when given in an oily or fatty base.

Estrogen dosage as well as the vehicle are important

considerations in such localized therapy. In their studies of cutaneous applications of estrogen, Chamberlain, Gardner and Allen[10] observed the type of results which encouraged the use of estrogens locally in small doses, clearly below the threshold for systemic results, in such cases as asymetrical development of the breasts and atrophic diseases of the vulvae.

As a matter of fact, considerable work had been done with local estrogen therapy in the treatment of undersized or underdeveloped breasts. In animal experiments, Jadassohn and his associates[12] found that a locally treated breast showed quicker and greater response than the non-treated one. They therefore concluded that there must be a local hormonal effect.

This has been confirmed clinically. MacBryde,[13] employing an ointment of hydrous wool fat and petrolatum containing 5,000 international units of estradiol or estradiol benzoate, produced definite breast growth of considerable degree by the estrogen substance absorbed through the skin directly into the breast tissue. He found that when breast growth was produced by injections of estrogenic material, there was diminishing effectiveness of the injected hormone, but when the hormones were applied to the skin, there was steady progressive growth.

In commenting on his own findings MacBryde observed that as more is learned about the local action of hormones, it may be necessary to choose between routes which involve entrance of the hormones into the general circulation and those which depend on local action on organs or tissues accessible from the exterior. In his opinion the mammary glands should be considered as appendages of the skin and when local action of administered hormones is desired it seems as logical to use the percutaneous treatment to the breasts as to use estrogenic substances directly on the vulva and vagina to relieve certain disorders of these organs.

Estrogen-containing ointments have found an established place in the local treatment of pruritus vulvae, senile vulvovaginitis kraurosis vulva and other similar disorders more or less related to changes in sex function.[8, 13, 14, 15, 16] Acne, which is often associated with sex and other endocrine changes, has also been benefited frequently by the use of estrogen-containing ointments.[8, 15, 17] Mussio-Fournier and his associates[18, 19] not only employed local endocrine therapy in the treatment of acne, but also reported 60 per cent success in the treatment of a series of cases of hypertrichosis by the local application of a follicular hormone preparation.

Estrogen therapy applied percutaneously has been of value in other dermatological conditions. Klaften,[20] for example, reported that follicular hormone ointment was applied in dermatoses relating to climacteric disturbances with beneficial results.

From the foregoing it becomes evident that estrogen-containing ointments have a logical role in dermatology. There is considerable evidence that properly compounded and correctly used preparations can provide local dermal effects without invoking undue systemic reactions.

The use of sex hormones in cosmetics offers great potentialities provided the limitations and dangers of these very potent substances are appreciated. These are not a type of cosmetic product that can be exploited without the advice of experts in the field of endocrinology and then only after extensive tests and checks.

Quite a few articles have been written on the uses of cosmetics, most of them appearing before 1939.[21, 22, 23, 24, 25] Many of the earlier papers were obviously premature, since local endocrine therapy was still very much in its infancy. Later, more experienced workers, such as Stafford[26] and Harry[27] emphasized the need for caution, while men like Winter[28] laid additional stress upon the need for the use of standardized estrogenic preparations. A check of these writings from the standpoint of more recent work indicates that most of the earlier formulators made the mistake of suggesting too high a percentage of estrogen in the cosmetic creams.

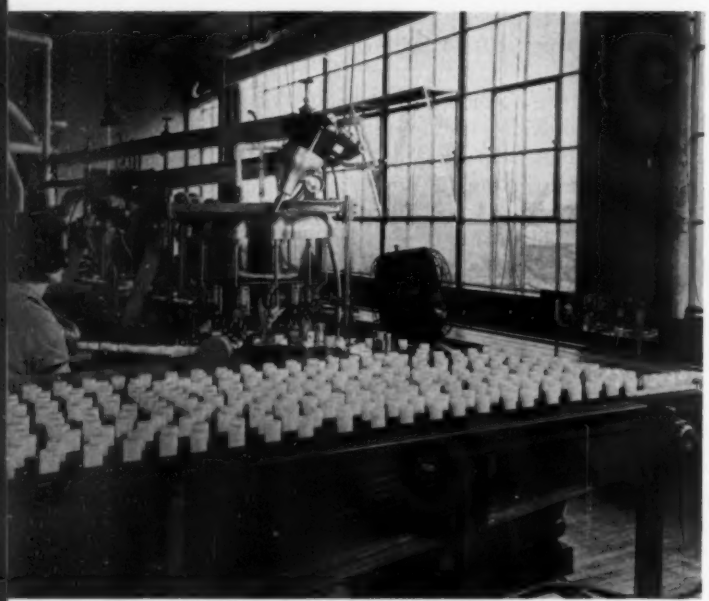
The effectiveness of hormone-containing cosmetics depends upon the kind and amount of estrogen employed as well as the vehicle in which it is dispensed. Today uniform estrogen products of known potency based on international units or weight are available,[29, 30] thereby eliminating much of the guesswork and uncertainty of former years.

From the available evidence, it appears that uncombined, natural estrogens are most suitable for local use. Emmons,[9] for example, did not employ esters in his studies because it seemed well established that they are less effective percutaneously than free compounds.

(*Continued on page 603*)

Potentialities of SEX HORMONE CREAMS *Need Careful Study*

Absorption Base Creams



MENTHOLATUM CO. CREAM FILLING LINE

ABSORPTION base creams have a long and quite interesting history. To the best of our knowledge it started approximately twenty years ago in Germany when the first brand of this type was brought on the market and merchandised as a sort of all-purpose cream. The emphasis of the advertising was, however, placed on the outdoor angle: A cream for protection against sun and wind during sports activities. This approach proved of tremendous sales appeal and within a decade the original brand was the best selling cream, not only in Germany but also in all other Central European countries, with numerous competitors going strong too.

A subsequent attempt to introduce this absorption base cream as a cosmetic item in the United States failed. However, on the strength of its merits it obtained a place in the market as a pharmaceutical product.

Drug stores carry an absorption base cream for which calls have been created through recommendation by physicians, and pharmacists use the related absorption base itself to fill prescriptions which specify it as an ointment base instead of USP cold cream. And some modern, brand-name ointments are also formulated with absorption bases.

Various absorption bases have also found their way into numerous cosmetic formulations, but mostly as an auxiliary component, either for the sake of enrichment or in order to promote better emulsification. We know of only one straight water-in-oil emulsion cream, and that one has not left its mark due to inept merchandising. But we believe the idea has merit and offers opportunities.

Everyone knows the virtues of hydrous lanolin. It has a wonderful softening effect and lots of it can be rubbed into the skin without leaving a greasy layer on top as cold cream does. But it also has an unpleasant smell and excessive tackiness. A water-in-oil emulsion cream made from a lanolin absorption base eliminates these faults and enhances the virtues. But before going further into a discussion of the finished product let us look into its preparation.

Three groups of materials can serve as absorption bases: (1) lanolin derivatives or concentrates, (2) cholesterol compounds, (3) hexitol derivatives.

All of them are capable of forming nice water-in-oil emulsion creams either by themselves or in combination with lanolin or with each other. Practically all are sold under trade names. Of course, it is possible for a cosmetic manufacturer to prepare his own absorption base with cholesterol and its derivatives. But it seems more feasible to leave this job to the experts in the field and to buy the specialties from prime producers. The manufacture of lanolin concentrates and hexitol derivatives is anyway beyond the reach of the cosmetic laboratory.

The general type formula for an absorption base cream looks like this:

(a)	**Lanolin absorption base**	295
(b)	**Mineral oil**	50
(c)	**Ozokerite**	50
(d)	**Water**	600
(e)	**Magnesium sulfate**	5
		1000

Procedure: Melt (a+b+c) together and bring to 50° C. Dissolve (e) in (d), heat to 50° C. and incorporate into the oil phase slowly while stirring. When all the water has been added, cool the batch gradually, add perfume at about 40° C., continue agitation to a temperature between 25° C. and 30° C., then pass the cream through an ointment mill or homogenizer. Fill cold into jars. (When vegetable oils or hexitol derivatives are present in the formula add preservative.)

The resulting product is a very soft cream, nontacky, non-greasy to the touch, with excellent effect on rough, dry skin.

Instead of the lanolin absorption base, a hexitol derivative base plus lanolin plus petrolatum can be used, or a cholesterol compound plus petrolatum and, if you like, lanolin. Other waxes, for instance ceresin or beeswax, can take the place of ozokerite. The addition

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Essential Services

By IVOR GRIFFITH,* Ph.M., D.Sc., F.R.S.A.

"PHARMACEUTICAL services" is an all inclusive term embracing those diversified activities which are necessary in order to provide safe medicaments and health supplies to physicians, dentists, and nurses, to the public, to the armed services, and to lend-lease program. This work has its roots in those establishments where drugs are imported and collected and where medicinal materials are manufactured and packaged for distribution and use. The duties of the pharmaceutical personnel in these plants are of a highly specialized nature and they include actual manufacture of such substances as the sulfa drugs and other antiseptics, anesthetics, blood plasma, serums, and vaccines, and hundreds of kindred substances.

Furthermore, it is manifest that all medicines must have adequate standardization and laboratory control. They must be reasonably permanent in their composition so that they are preserved against alteration and decomposition. Every unit of medicine released must be standardized for safety, and controlled for dependability.

The constant search for improved products is also an important pharmaceutical service and the great drug companies of America are and have been outstanding in such humanitarian research. No group of commodity suppliers to the armed forces has made a more substantial contribution in dependable materials than these manufacturers in the health agent field.

Next come the distributive phases of pharmacy wherein we have jobbers and wholesalers who serve as vital supply lines for the retail pharmacist who could not possibly buy directly and quickly from the hundreds of drug manufacturers dispersed over the country.

We have also the professional representatives of the various drug manufacturers who constitute an important group, for it is these trained men who keep both physician and pharmacist informed of the availability and the manner of implementing the new drugs that are being released constantly. Some of these men have been the contact agents whereby the medical departments of the Army and Navy have been able to formulate and expedite their problems of supply.

The hub whence ultimately radiates into civilian service all of these health agents and services is the retail and prescription pharmacy and also the hospital pharmacy. It is upon these essential workers that the compounding, dispensing, and delivery of drugs and health supplies to the sick depends, and without them the services of physician would be seriously handicapped. They play a vital part in safeguarding the health and wellbeing of the nation.

Some three-hundred million prescriptions were compounded in the United States last year which divided among the less than fifty-thousand existing pharmacies, affords an average prescription practice of some six-thousand per store per year, which in itself speaks for the importance of this phase of pharmaceutical service.

Not only do these pharmacists fill prescriptions, but they intelligently retail to the public and to physicians, dentists, and nurses, an unlimited number of products whose implementation requires the advice of one having a special educational background; products for example such as clinical thermometers, syringes of all kinds, atomizers, surgical dressings, trusses, abdominal supports, and many other such appliances—materials safely dispensed only by a trained personnel.

FREDERICK S. STEARNS & CO. LABORATORY

Furthermore, there is today an even greater need for the services and advice of the pharmacist in supplying to the public simple household remedies which must be relied upon more than ever in view of the current serious shortage of doctors. One-third (about 50,000) of the country's physicians are at present serving the ten-million or so in the armed forces. Therefore, the civilian population, including the important defense workers must now depend upon two-thirds (about 100,000) the normal supply of physicians. Obviously this shortage has imposed more responsibilities on the pharmacist and it is clear that the health of the nation greatly depends upon the continuation of this service.

Only a trained pharmacist can properly advise a person as to when selftreatment is without serious

(*Continued on page 579*)

*President, Phila. College of Pharmacy & Science

BLACK STAR

Heat Disorders

By M. A. LESSER

Among other things therapeutic, the war has served to emphasize the products for preventing and treating heat disorders. With our armed forces serving in many areas of prevailing high temperatures and humidity, methods for recognizing, preventing and treating such cases are important items in military medical manuals.

Not very long ago, interest in disorders due to heat was limited largely to those concerned with the health and efficiency of workers in certain industries. However, as thousands of men began to train under hot summer skies and as other facts began to be correlated, the importance of these undesired heat reactions began to take on increased importance. The application of knowledge concerning heat diseases has already favorably affected the lives and comfort of millions of people and holds important implications for the general health status of the nation.

People living in tropical moist countries have adapted themselves to high atmospheric temperatures and severe heat disorders are seldom seen except in newcomers from cooler regions. Singularly enough, few people realize that the most severe heat actually occurs in so-called temperate latitudes. As Mills[1] points out, temperatures of over 100° F. are rare in tropical regions, except in desert areas, while temperatures above this level are not at all unusual during severe summer heat waves as far north as the prairie provinces of Canada.

In view of this fact, it is understandable why sudden severe heat waves of summer sometimes kill thousands of people before their bodies can be adjusted to the unexpected and difficult conditions. Occasionally in periods of extreme heat and humidity great numbers of people may be prostrated as though an epidemic had occurred.[2] Persons with sclerotic diseases and those with limited cardiac capacity are especially prone to suffer from these sudden rises in temperature.

Nonetheless it has been recognized that men and women in top physical condition can also be ready victims to heat diseases. This was brought to the fore with considerable force during the 1941 army maneuvers in Louisiana and in the Carolinas when several hundreds of soldiers were stricken with heat prostration.[3] Similarly, numerous cases of heat exhaustion were reported from other regions, such as the Mississippi training area.[4] Methods for recognizing, preventing and treating heat disorders are important items in military medical manuals.[5, 6]

Industrial physicians have long realized the menace of heat plus moisture and have taken definite steps to prevent the occurrence of heat disorders in factories and mines. However, the problem of heat disease extends much further than to camps and industries, because the general population, especially those who live in cities, are equally susceptible to these disorders—perhaps even more so. It is known that heat deaths and prostration occur mostly in urban and desert re-

gions. Even so, city people get the worst of it, because in desert areas the daytime heat is quickly reradiated off into space after sunset, but in built-up city areas it tends to be trapped within the buildings and to cause progressively higher temperatures as the heat wave persists day after day.[1]

Obviously there is a good opportunity for some enterprising group to educate the public with regard to heat disorders and to provide the means for preventing them.

Excessive exposure to heat may result in one of three rather specific conditions: heat cramps, heat stroke or heat prostration. In addition to these definite disorders, it must be realized that on exposure to high external temperatures, a strain is placed on the entire system, especially the circulatory mechanism. Thus persons with almost any systemic disease are liable to suffer from an aggravation of their symptoms during hot weather and therefore require special consideration and care. However, even normal persons differ greatly in their ability to tolerate heat, but those least able to resist high temperatures are the very young, the very old and the obese. Alcoholics and those who have once had sunstroke are especially predisposed to heat diseases.[7]

Without going into details on the intricate mechanism by which the body regulates its heat,[1, 8, 9] it may be said that many authorities are of the opinion that the various forms of heat disease are manifestations of the same pathological process. This process varies in degree and depends upon the adjustive ability of the individual and upon the extent of exposure to high external temperatures. However, except for basic preventive measures common to all heat disorders, these diseases vary in their immediate causes, severity and type of symptoms and in methods of treatment.

Heat cramps, also known under such indicative names as: water poisoning, stoker's cramps, miner's cramps, mill cramps, cane cutter's cramps, fireman's cramps, and salt deficiency, is the least serious of the three common heat disorders. This condition manifests itself by painful spasms and contractions of the abdominal muscles and of the muscles of the extremities and in severe cases may simulate epilepsy. As a rule these signs are also accompanied by pallor, nausea, dizziness and mental depression. Caused by exposure to heat and conditions causing muscular fatigue, the condition is brought about by the excessive loss and failure to replace body fluids and sodium chloride.[6, 7, 10]

Heat exhaustion, characterized by weakness, dizziness, clammy skin, rapid pulse and respiration, and low blood pressure, resembles shock and is much more serious than heat cramps. Sometimes called heat collapse or heat prostration, this disorder results from exposure to high temperatures such as are found in boiler rooms, foundries, bakeries or the like and often occurs on the march or when soldiers are standing at attention on a hot day.

The severest form of heat disease is heat shock. Variously called sunstroke, heat pyrexia, insolation, sun traumatism and solarism, the condition generally results from direct exposure to the sun's rays. However, it may occur from exposure to high temperatures and dry environmental conditions where there is no exposure to the sun at all.[11] Recognized by the high fever, dry skin and high blood pressure, unconsciousness usually occurs. A very dangerous condition, heat stroke accounts for a large proportion of the heat wave deaths reported every summer.

Most people are aware that it is possible to acclimatize or condition individuals to withstand higher external temperatures so as to permit safety, comfort and efficiency.[9, 12, 13, 14] This is amply demonstrated by the fact that heat stroke deaths begin to fall off in August after people have become adjusted to hot weather during June and July.[1] The importance of such conditioning becomes quite evident when it is remembered that American soldiers were trained under desert conditions before landing in North Africa.

Nonetheless, it must be emphasized that before any acclimatization can take place, certain measures must be instituted to prevent immediate heat disorders. After conditioning, the preventive measures must be continued, though obviously not to the same extent. As with every other disorder, prevention is more important than cure, and in the case of heat disease, prophylaxis provides good returns.

Nearly a decade ago, Fantus[7] pointed out that preventive treatment is identical for the various disturbances due to excessive heat. His basic rules still hold good and, in his opinion, a prophylactic program must embrace: (a) Increasing heat elimination by favoring the production and evaporation of sweat; this being best achieved by ingesting an abundance of water and maintaining the sodium chloride balance through added salt intake; (b) Lessening heat production by reducing muscular exertion when the heat is intense; (c) Minimizing exposure to heat; and, (d) maintaining the heat regulating center of the body in an optimum condition by avoiding alcoholic or stimulating beverages.

It has long been known that merely drinking water was not enough to prevent heat disorders, hence the condition commonly referred to by miners and furnace workers as "water poisoning." Modern knowledge has shown that symptoms of heat cramp and heat exhaustion are not the result of over consumption of water but rather the serious depletion of chlorides, since salt is constantly being lost in the perspiration and urine.[15] In cases of excessive sweating, the body is robbed of large amounts of salt and this must be replaced to maintain the normal balance and prevent heat reactions.

The prevention of such salt deficiency is a relatively simple matter. Salt intake must be increased if exposure to high temperatures is anticipated or actually experienced. Talbott[3] estimates that a daily intake of 15 Gm. of sodium chloride will protect against most symptoms of salt deficiency. British studies[12] have shown that when men are properly conditioned to hot

(*Continued on page 606*)

OIL GERANIUM

By G. V. BRANIGAN*

It is doubtful if there is any group of essential oils which serves the perfume industry more admirably than those obtained by steam distilling the leafy plants of the many species of the family *Geraniaceae*. While this family is comprised of numerous species of *Pelargonium*, those which are cultivated exclusively for the commercial production of essential oils are the *P. capitatum, Ait., P. graveolens, Ait., P. odoratissimum, Willd.* and *P. radula, Ait.*

Extensive cultivation of plants for the commercial production of essential oil is carried on chiefly on the island of Reunion, (the Bourbon Islands), in North Africa, (chiefly in Algeria), Russia, British East Africa and in the South of France. Cultivation has also been observed by the writer in other areas but either the quantities involved or the quality of the distillate have detracted materially in one way or another from the commercial interest.

Plants are propagated by means of slips or cuttings. These are set in well drained sandy soil and subjected to nursery care for six to eight weeks before being transferred to field conditions.

In Reunion, Algeria, and in Russia—the principal producing areas at present—cultivation is accomplished at a moderately low elevation in areas where an abundance of sunshine is available; successful growth depending much upon a well drained soil, a relatively dry climate, and low wind velocity. Plants so located reach an average height of 3¼ feet in seasons when element ratios approach the normal.

During 1939 much cultivation research was applied to plants both in Russia and in Algeria; tests being made with fertilizer mixtures containing varying proportions of nitrogen, phosphorous, potash, and calcium. Supplementary studies as to the effects of controlled irrigation were also carried on and even though conducted on a small scale results were most interesting, particularly with respect to leaf formation, yield and quality of oil obtained.

This work follows the investigation of Boutilly and the studies at Mouzaiaville[1] in 1929 where the effect of the application of 300 or 400 kilos of ammonium chloride per hectare were noted. Although slightly increased yields were obtained in some instances from the areas under observation, results of this earlier work as regards quality and quantity were not entirely conclusive.

Much acreage is allowed to bloom full before cutting, but as a result of recent investigation in many areas, meticulous growers now do not follow this practice inasmuch as the yield and quality of the oil seems to suffer to some extent. It is indicated that an advantage is gained in making harvest when buds are well formed and about to break to full flower. Recent test runs with *P. odoratissumum* show that the findings of Biandini[2] may have been in error.

In Algeria and in Reunion some acreage has been in continuous production without replanting for 8 to 9 years, although after the fifth year the yield of oil, as a rule, begins to drop substantially. In areas North of Cannes in Southern France, acreage is renewed each year because of the inability of the plants to withstand the cold nights during the winter months.

In the important producing areas, steam distillation is carried out by the larger growers, who not only run their own stock, but also handle the cuttings of small farmers in their area, on a custom basis.

Equipment, varying from crude to moderately well constructed, consists of stills, which on modern farms can handle from 2 to 4 tons of plants in 24 hours during the rush season. In Russia and in British East Africa, many single units are in operation while in Reunion and North Africa triple unit stills permitting continuous operation during the harvest, are favored. Steam is supplied either by direct fire under each still fitted with a false bottom which supports the stock, or by injection from the lines of a supplementary boiler.

Plants are packed in the stills as soon as possible after cutting so as to eliminate loss of oil which invariably occurs when field collection of the cuttings is delayed. Often yields have dropped well below 50% of normal because of neglect in harvesting an acreage above that of the still capacity for 24 hours.

On the average, each run requires a full steam flow of 20 to 45 minutes to complete extraction.

NORTH AFRICAN PRODUCTION

Except for small areas in Morocco, growing sections are located principally on the Mitidja Plain, a strip of land approximately 54 miles long and varying in width from 11 to 17 miles, situated between the Mediterranean

* Technical Director, Ungerer & Co.

Coast and the Oulad Nail Mountains of the Atlas Chain.

Producers outlets are centered at Blida some 40 miles southwest of the city of Algiers and at Bouihan, Chiffa and Boufarik where cooperatives have been active and interested in recent years.

Just prior to 1939, these areas had slightly over 5,000 acres under Geranium cultivation with a potential output of 31,000 kilos of prime distillate. Two and often three harvests are collected, the first yielding bulk runnings in the month of May and early June; stock for the second crop as a rule being cut between July and October.

The oil yield varies from 0.07 to 0.14% depending upon condition and time of harvest.

TYPICAL ANALYSIS

Color	Pale yellow to golden yellow
Sp. Gr. 15°C.	.8951—.9019
O.R. 15°C.	−8°10′ to −9°55′
Ref. Ind. 20°C.	1.4661—1.4698
A.V.	1.7—9.4
E.V.	60.2—74
E.V. after acetylation	210—224
Total alcohol equivalent calculated as ($C_{10}H_{18}O$)	68.5—74.06%
Solubility in 70% (C_2H_5OH)	3.0 volumes at 25°C. sometimes with slight opalescence when the quantity of solvent is increased.
Esters as Geranyl tiglinate	25.37—31.18%

Boiling range, 760 m.m.; 216-219°C., 8%; 219-224°C., 8%; 224-234°C., 40%; 234-242°C., 17%; 242-250°C., 9%; 250-258°C., 9%; above 258°C., 9%.

REUNION PRODUCTION

This island, one of the Mascarene group lying approximately 450 miles due east of Madagascar, covers some 965 square miles in area and has for its capitol St. Denis, a center of commerce and trade.

This picturesque and interesting city with somewhat over 25,000 inhabitants, is situated at the mouth of the St. Denis and Boutar rivers and at the foot of the high mountains which slope from the interior to the coast.

With its very suitable port facilities, La Pointe de Galets situated in the northeast portion of the island, serves a large part of the seaborne trade.

Prior to 1937, most Geranium cultivation was carried out in the Tampon and St. Pierre areas but during 1938, 1939, and 1940, acreage was increased and planting has been extended to Entre-Deux, St. Joseph and to the Coffin and Palmetto Plain. It is these new districts which account for the increased production of the Reunion distillate during this time.

Much of the cultivation, care and development of nursery slips is done by small growers in the South and Southwest portion of the Island. Special care of the young stock is usually compensated for by healthy plants comparatively free from Rust (Fr. Rouille) and

Algeria and Reunion Island are the two chief geranium oil producing centers of the world. Algerian growing centers are located on the Mitidja Plain with producers' outlets at Blida, Bouihan, Chiffa and Boufarik. In Reunion, most of the cultivation is in the south, centered about Entre-Deux, Tampon, St. Pierre and St. Joseph.

other diseases when plants are transferred to actual field conditions.

The oil yield varies from 0.10 to 0.17%.

TYPICAL ANALYSIS

Color	Green when freshly distilled becoming yellow with age and when exposed to air and light for extended periods.
Sp. Gr. 15°C.	0.889—0.8925
O.R. 15°C.	− 11°5′ to − 12°50′
Ref. Ind. 20°C.	1.4629—1.4659
A.V.	2—9
E.V.	66—76
E.V. after acetylation	200—222
Total alcohol equivalent calculated as ($C_{10}H_{18}O$)	64.70—73.25%
Esters (calculated as (Geranyl Tiglinate)	27.81—32%
Solubility in 70% (C_2H_5OH)	3 volumes clear in additional solvent

Boiling Range, 760 m.m., 213-216°C., 5%; 216-219°C., 6%; 219-224°C., 21%; 224-234°C., 38%; 234-242°C., 12%; 242-250°C., 5%; 250-258°C., 5%; above 258°C., 8%.

RUSSIAN PRODUCTION

Practically all of the Soviet plantings are located in Abkhasia, Adscharistan and West Georgia in the North Caucasus and in the vicinity of Batum, a fortified Mediterranean seaport serving the Caucasus. Some attempts at cultivation have been made in the Crimea and recently excellent yields[3] have been reported from plantings in the "Sovhoz" Reger in Middle Asia.

Production has been encouraged to some extent by government agencies and as a result each year has shown a marked increase in Soviet output, indicated in the estimated production figures given below.

Samples examined, representing a cross section of the whole production have been of good quality; the odor closely resembling a mixture of eight parts of Algerian and two parts of Reunion distillates.

Yields have been high, averaging in some districts 0.21% for the first year harvest. This, however, may be due in some instances to newly cultivated soil while in others to the indicated reduction of the number of plants per acre, ie. 9000 to 1 hectare[4] as compared to 15,000 and sometimes higher in other areas.[5]

Indicated yields are high per kilo of plants distilled but relatively low when computed on the basis of kilos of oil per hectare planted.

The oil yield varies from 0.11 to 0.24%.

TYPICAL ANALYSIS

Color	Pale yellow to golden yellow. Sometimes with greenish tinge.
Sp. Gr. 15°C.	0.889—0.8944
O.R. 15°C.	− 10°20′ to − 13°20′
Ref. Ind. 20°C.	1.4660—1.4682
A.V.	1.8 to 9.0
E.V.	67—76
E.V. after acetylation	220—225
Total alcohol equivalent calculated as ($C_{10}H_{18}O$)	65—76%
Solubility in 70% (C_2H_5OH)	2 to 3 volumes becoming slightly opalescent as a rule with additional solvent.
Esters (calculated as (Geranyl Tiglinate)	27.5—32%

Boiling Range, 760 m.m.; 218-219°C., 2%; 219-224°C., 11%; 224-234°C., 50%; 234-242°C., 16%; 242-250°C., 7%; 250-258°C., 1%; above 258°C., 3%.

BRITISH EAST AFRICA PRODUCTION

The production of oil from the colony districts consists chiefly of a distillate, designated by the natives as Mawah. Cultivation on a commercial scale was first brought to the attention of the writer in 1927. Later in 1929,[6] primarily because its relatively low price, interest in the product by English soap manufacturers encouraged growers to expand the output.

While there has been some differences of opinion as to the exact botanical derivation of the plant, there are indications that when cultivation was first started, use was made of slips of *P. graveolens, Ait.*, which were

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ESTIMATED GERANIUM PRODUCTION

(kilograms)[3]

Year	Reunion	Algerian	Russian	British[1] E. Africa
1920	66,101	16,900	....	....
1921	74,211	16,822	....	....
1922	78,194	19,850	....	....
1923	91,004	46,210	....	....
1924	114,210	58,902	....	....
1925	119,069	89,321	....	....
1926	117,922	124,206	....	....
1927	84,504	101,557	....	3,280
1928	87,372	132,263	....	4,710
1929	86,100	48,426[7]	....	5,180
1930	88,910	58,173[7]	....	7,500
1931	89,991	31,000	....	8,770
1932	76,614	31,210	11,273	8,480
1933	83,593	31,756	12,721	7,360
1934	96,710	38,929	12,997	7,020
1935	83,455	40,326[7]	13,764	7,080
1936	91,106	39,296	14,479	9,300
1937	100,320	38,121	15,926	8,760
1938	106,100	40,319	16,100	9,460
1939	101,000	....	17,423	7,410
1940	.....	....	19,600	....

U. S. MARKET RANGE

Year	ALGERIAN High	ALGERIAN Low	REUNION High	REUNION Low
1920	9.55	8.70	8.55	7.80
1921	8.60	4.50	7.70	4.00
1922	9.00	4.65	6.50	4.55
1923	9.05	8.00	7.90	5.55
1924	8.55	7.15	8.00	6.85
1925	7.25	4.80	7.00	3.95
1926	4.65	2.90	3.85	2.85
1927	3.50	2.90	3.60	2.80
1928	4.30	3.50	4.95	3.00
1929	5.30	3.70	5.90	4.30
1930	5.30	4.15	4.80	4.05
1931	4.40	3.70	4.50	3.65
1932	4.25	3.80	4.20	3.60
1933	6.70	4.30	5.20	4.30
1934	6.60	5.55	5.60	5.40
1935	5.50	5.00	5.35	4.90
1936	5.15	4.60	5.45	4.80
1937	4.70	3.90	4.75	3.90
1938	4.00	2.65	3.85	2.40
1939	3.15	2.30	3.20	2.20
1940	12.20	2.70	12.10	2.70
1941	14.75	12.20	15.20	12.40
1942	29.90	14.80	25.00	15.25
1943	16.00	14.40	18.00	12.20

CONTROL OF COSMETICS

"This article contains nothing new or startling, nor does it contain anything that has not been better presented by more experienced writers, but from contact with several large and small cosmetic manufacturers, I felt the thoughts expressed, should by constant hammering, be driven home to those manufacturers who have not yet learned, or are learning the hard way, that the good old days of lush advertising and exaggerated trade puffery are over, and that a product must have more than a nice odor or an attractive package to become a success."

By GEORGE W. PEGG

THIS article does not concern itself with specific methods of assay, processes, or tests for determining the quality of cosmetics, but simply points out the ever-increasing need for complete controls and specifications, not only for raw materials used in the composition of cosmetics, but for the finished products themselves.

It will contain banalities and platitudes, but as there are still some cosmetic manufacturers who do not yet realize their obligations to the public, or if they do, hope to "get by" with a bare compliance with the law, it is considered advisable to repeat many self-evident truths.

The Food, Drug and Cosmetic Act makes it obligatory upon every manufacturer to place on the market only preparations of pre-determined value for the purposes intended, as well as freedom from toxic or harmful substances.

It is impossible to do this without extensive tests of the ingredients, and clinical tests of the finished product. Many manufacturers are not equipped to carry out either of these mandates, but as a safeguard to their business, they should arrange with some reputable commercial laboratories to perform the necessary assays of raw materials, and for some clinical dermatological institution to justify the claims made for the products. Otherwise they may find themselves in difficulties with the authorities on possible overstatements of results that can be expected, or from harmful results through the use of their products.

In these days of "ersatz" materials it becomes more and more imperative not only to know what may happen to your product through the use of these substitutes, but also to know whether any reaction, chemical or otherwise takes place that may change a hitherto innocuous preparation into one that may cause harm to the user. Many of these substitutes are comparatively new to the cosmetic industry, and have not been in use long enough to determine either possibility. Therefore the manufacturer should move cautiously before abruptly changing his formula or adopting every new material suggested, without first determining the harmlessness and stability in his product.

There are still many official ingredients on which restrictions and allocations are gradually being lifted, as war needs lessen, but even those bearing U.S.P. or N.F. titles should be subjected to further tests to be sure they meet official requirements and specifications.

With a careful selection of chemically and clinically tested materials, the cosmetic manufacturer is doing all he can to ensure the reliability of his products. The finished preparation then depends on the equipment, the skill and experience of his operators and the rationality of his formula. It should hardly be necessary to add a very important part of the procedure—absolute cleanliness at all points of manufacture. No other class of consumer products goes into more fastidious hands than cosmetics. Many of us have been through large plants where foods are being processed for consumer use, and are familiar with their gleaming white enamel, highly polished monel metal or stainless steel kettles, tanks, mixers and other equipment, hooked up with sanitary fittings, etc. So it should be in the cosmetic laboratory.

Section 704 of the Food, Drug and Cosmetic Act, authorizes inspectors from the Food and Drug Administration to enter factories or establishments to observe "all pertinent equipment, finished and unfinished materials, containers, and labeling therein." The main purpose of this inspection is to gain first-hand information as to the quality of materials used and the sanitary conditions under which the cosmetics are produced. The smart manufacturer will therefore cheerfully acquiesce in such inspection, and furnish such information as does not involve trade secrets or divulge his formula. Refusal to admit an inspector is poor policy, since it at once casts a suspicion that all is not as it should be, and as the F.D.A. can compel admittance, there is no point in refusing. As these inspectors may

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We didn't have a machine for this packaging job

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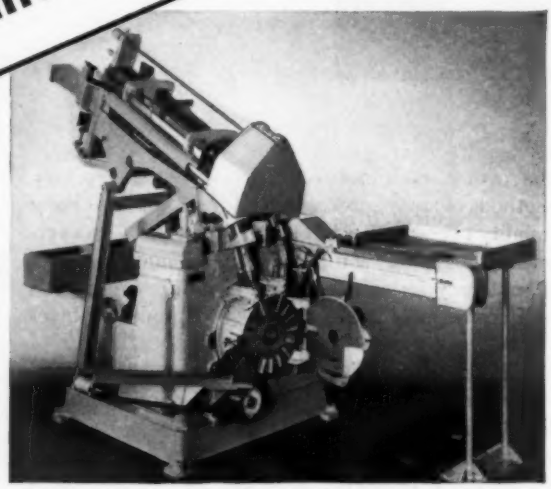

When peace comes, you'll find this sort of designing and machine-building skill worth calling on

As you witness the accomplishments of various companies in the war effort, you are no doubt making mental notes of those organizations that are doing the sort of things which may prove of value to you in peace-time . . . We believe, therefore, that this clip-loading machine will interest you as a user of packaging machinery. For it shows: (1) the ability to think fast; (2) to design simply and practically; (3) to build machines quickly and in quantity.

With just a few clips and cartridges for experimenting, we designed and built the first clip-loading machines in three months time. The machine for Springfield clips loads 150 clips per minute; the machine for the Garand, 70 clips per minute.

Batteries of these machines are now in use—and they are by no means the only armament machines we have created.

It's work of this type, as well as the building of wrapping machines for manufacturers who are supplying the armed forces, that will lead to new and better peace-time packaging. We are working on ideas right now, and will be glad to study any new developments you may have in mind.

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Packaging and Selling

War Information

Although we haven't quite figured out how it classifies as war information, the Office of War Information on April 23 released a four-page, single-spaced story on the cosmetic industry. "Information for the report on supply, cost, kind and quality of cosmetics expected in 1944 was obtained from the War Production Board and the Office of Price Administration. Related data came from *other agencies.*" These last two sentences are a direct quote from the O.W.I. story except for the italics, which are ours. We use them advisedly for we are apparently among the *other agencies.* Included in the story are figures on annual sales of cosmetics and these figures are ours, arrived at by our organization and first published each year in BEAUTY FASHION and DRUG AND COSMETIC INDUSTRY, although used in this release without any reference to source except *other agencies.* This is O.K. with us, for the government can have anything including our shirt, as Mr. Morgenthau already knows, but if anybody else had lifted the stuff without credit we'd certainly be burned up.

We also have a slight correction to offer in connection with the lipstick figures given in the story. The statement is made that "in 1942, American women used 120,000,000 lipsticks." Now we wouldn't know how many lipsticks American women *used,* but if the figure is intended to represent the number of pieces actually sold during 1942, we think the figure is somewhat high.

In our July 1941 issue we estimated that "the annual lipstick business runs to some 85 million units." Our estimate of the 1942 sale would be about 100 million pieces rather than the 120 million given in this release. But the difference is of little consequence, for the way business was in 1942 and 1943 it would probably have been no trick to dispose of 150 million pieces if they had been available.

Another minor error was to list cake make-up among the "war babies" along with cosmetic stockings, solid perfumes and colognes, cream colognes, etc. Max Factor's introduction of the "Pan-Cake" dates back seven years and neither its introduction nor the current popularity of it and other cake make-ups has any relation to the war or shortages resulting from the war.

The O.W.I. story contained these two sidelights—that "the average woman worker is spending $2.37 a month on cosmetics according to a sampling survey reported to W.P.B." and that "the 10 per cent levy was expected to yield $34,900,000 or over $2,000,000 more in taxes on cosmetics than was paid last year."

The story had the following information to offer on the subject of shortages.

"Glycerin is now as plentiful as in 1941."

"Only half as much alcohol as was used in cosmetics in 1941 is available today. . . . Today isopropyl is allocated on a monthly basis because of its scarcity. Isopropyl alcohol colognes have not proved as popular as the cream varieties because of inability to cover up the odor. . . . . "

"The most serious shortage of raw materials is lanolin."

"Castor oil has been scaree but is now more plentiful."

"The quality of nail polishes, now rather poor, will remain about the same."

"Compacts, lipsticks and rouge will be found in plastic cases to a large extent in 1944. . . . The amount (of plastics) available in the first quarter of 1944 is more than . . . . in the entire last half of 1943."

"Some carbon steel is currently available to lipstick manufacturers."

"Greater difficulties will be encountered in supplying boxes for shipping."

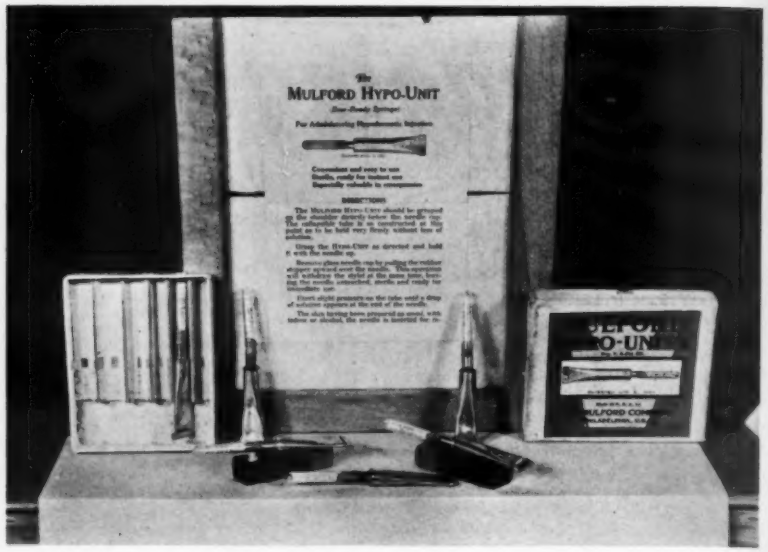
Ration "K" Package Redesigned

We were struck by a small item in the "Army News" which said that the Ration "K" package had been redesigned in the interests of readier distinguishability and greater attractiveness, so we sent for a picture so that you could rejoice in the package change with us. The breakfast carton is printed in brown, dinner in blue and supper in green on a greyish-tan board. The old carton shown below the three new ones was black on olive drab and all meals looked alike except for the name of the meal contained. Seems to us that this is one of the most magnificent tributes ever paid to package design for, under circumstances in which you'd have to eat the ration or starve, you'd think at first that it wouldn't make much difference how it was packaged. But the Army thought differently and we think they're right. Bet there's a lot more anticipation and a great deal more pleasure in eating it when it comes in an attractive package.

Syrettes, Monojects, and Hypomatics

Our piece on single-dose hypodermics in the March issue went slightly off the beam with respect to the age of a unit of this kind and with respect to completeness. Seems the unit was first developed during the last war and that there are several such units being made today.

"The Louisiana Pharmacist" shows on the front cover of its March issue a picture of the "Mulford Hypo-Unit" which it says is one of the earliest of these "one-shot" units. This may be a version of the unit which another correspondent referred to as the one which was developed during the last war. J. F. McCloskey, editor of that publication, was good enough to send us the picture which we reproduce here. This one was patented April 5, 1921.



The one we showed was apparently a "Syrette" made by Squibb. A British version is made in England by Burroughs Wellcome and called "Monoject." In addition there is the "Hypomatic" which is being made by the Schering Corp.

We are indebted to Oscar Gottfried, publisher of "The New York Physician" for sending us a circular on the "Hypomatic," which we reproduce here, and for the following comment concerning it. He writes, "This device represents a unique advance in parenteral therapy and is most desirable because the contents are always in neutral glass and can be seen at all times. Further, the person administering the "Hypomatic" can actually see the solution entering the patient's body."

Robert A. Hardt, director product development, E. R. Squibb & Sons, was among those who straightened us out on the secrecy angle. He wrote that, "We feel sure you will be interested to know that these single dose hypodermics have not been under any special cloak of secrecy as the attached annotated bibliography will indicate. We are also enclosing a reprint of one of our advertisements which refers to the use of "Syrettes" at the battle front and illustrates our device."

Mr. Hardt was too nice a guy to rub it in but the bibliography he was good enough to send had 26 references dating from early in 1942. We are also reproducing below a portion of the Squibb advertisement he enclosed.

Flexible Packaging

According to a release we have, the Reynolds Metals Co. "makes almost 100 per cent of the flexible packaging material for drugs, food and ammunition sent overseas to our fighting men." This was something we didn't know 'til now.

However, the purpose of the release was to tell us something about post-war packaging of drugs. "After the war, more and more drug packages," according to Duane Davis, drug industry manager of the company, "will be made of laminated aluminum foil, hermetically heat-sealed by a new Reynolds process, so that pharmaceuticals, biologicals and botanicals will be better protected from the injurious effects of moisture, evaporation, odors and light.

"All of the functional advantages of foil will be put to the best use. Protected by foil to a degree of efficiency approaching that afforded by solid metal, pills and pellets, vitamins, gauzes, powders, jellies, serums and solutions—even cosmetics—are expected to have a longer life on the shelf than they had before the war. The new containers cost less to manufacture and transport than those of solid metals."

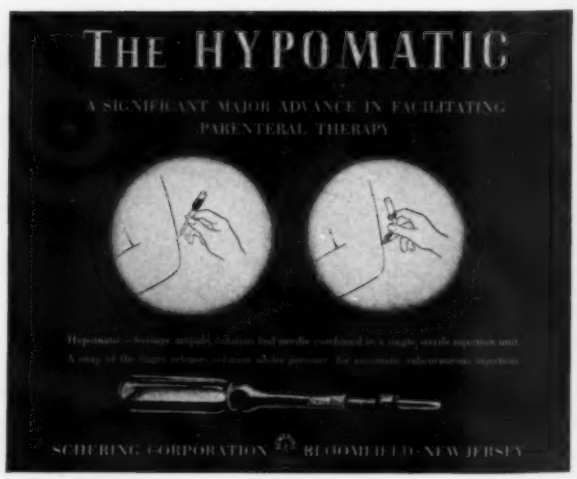
Pain-killing Syrettes*, "sulfa" drugs, and Human Serum Albumin Concentrated are examples of war products from the Squibb laboratories.

On the home front, Squibb research signifies a promise of a better, healthier tomorrow. One by one, modern medical science is removing the threats of death that mankind has feared for centuries. That's what Squibb's ever continuing research means to you and yours. A future you can believe in. *Reg. U. S. Pat. Off.

E·R·SQUIBB & SONS

Manufacturing Chemists to the Medical Profession Since 1858

THE PRICELESS INGREDIENT OF EVERY PRODUCT IS THE HONOR AND INTEGRITY OF ITS MAKER


THE HYPOMATIC
A SIGNIFICANT MAJOR ADVANCE IN FACILITATING PARENTERAL THERAPY
SCHERING CORPORATION
BLOOMFIELD · NEW JERSEY

Renoir, creators of Chichi, have announced the introduction of My Alibi, at $12.50 an ounce, in a package by Stahlhut.

Carnations, traditional for Mother's Day, have been captured by Ann Haviland in a true-to-the-flower fragrance series.

Face powder has been added to Orloff's Attar of Petals line packaged in a decorated white-glass jar designed for re-use value.

"My Alibi"

Renoir Parfums Ltd., creators of "Chichi" perfume, have announced the introduction of a companion perfume, named "My Alibi." Like Renoir's first born, My Alibi is strikingly packaged. It is presented in four sizes, ¼ ounce, $3.75; ½ ounce, $7.00; 1 ounce $12.50 and two ounce, $24. The packaging, designed by Stahlhut carries out the feminine, provocative note suggested by the theme—"Put a new face on romance with My Alibi." Its color, a brilliant peacock blue, was selected both for eye-appeal and effective display in contrast to the heart-red of Renoir's Chichi. The bottle is a slender, faceted column of frosted glass with a black stopper.

If . . .

"If" is the intriguing name of a new perfume about to be introduced by Parfum Moneau. "If" is handsomely bottled with a brilliant blue stopper. The flacon rests in a base of clear plastic with a color splashed modernistic cover. The plastic pedestal is designed so that the bottle may stay in it on the dressing table. The only identification on the bottle is a small sterling silver charm with the name on one side and Parfum Moneau on the other. The perfume itself is an exotic, sophisticated fragrance. The price range is the same as Parfum Moneau's first offering, "Discovery," ½ ounce $10, and 1 ounce, $18.50. It is available only in perfume.

Re-Use Packages

Orloff has added face powder to its Attar of Petals toiletries line. The powder comes in milk glass jars, which later may be used for cigarettes, relish or olive containers. The low round white jars are prettily covered with a raised pastel design, and retail for $2.50. The new powder jar follows Orloff's original idea of having its products in containers that have a re-use as well as a decorative value.

New Departure

The Sofskin Co., distributor of Sofskin Creme, a hand cream, is introducing Sofskin Creme Cologne, an entirely new departure for this company which has been merchandising the hand cream alone as a specialty for many years. Sofskin Creme was originally sold only through beauty salon outlets until a couple of years ago when department and drug store distribution was started. The new creme cologne, a floral, and tinted pink, will be sold through the

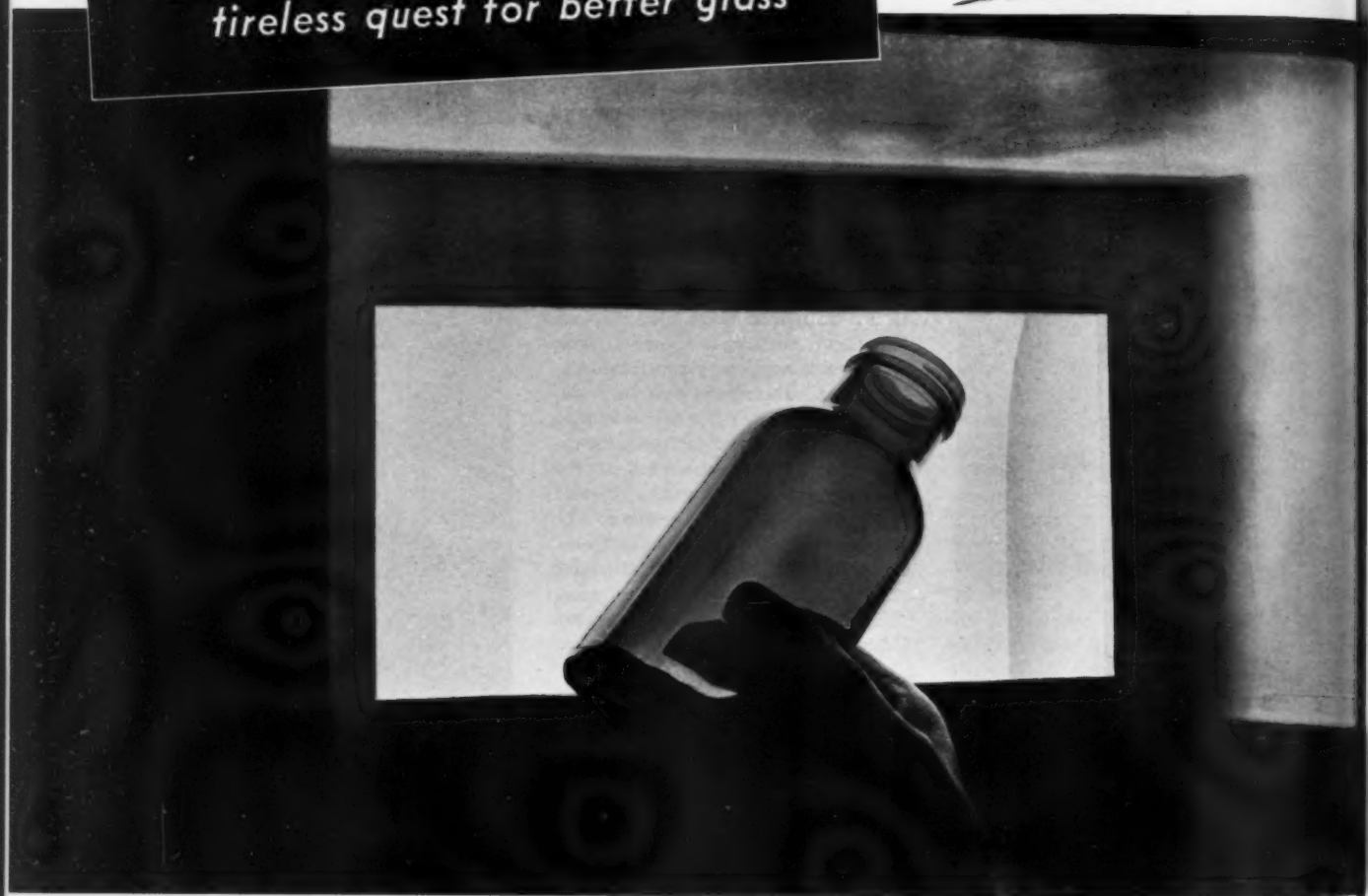
A brilliant blue stopper, a pedestal of transparent plastic, and a sterling silver identification tag feature "If", by Parfum Moneau.

Alexandra de Markoff's Water Nymph bath preparations are newly packaged to make beautiful gifts for all occasions.

Sofskin is introducing a floral creme cologne, tinted pink, as a companion item to the hand cream marketed by that company.

"A PATCH OF OVERCAST NORTHERN SKY" . . .

a colorful item in research's tireless quest for better glass



FOR years, glassmakers made sure their flint bottles were really colorless by viewing them against the light of an "overcast northern sky." This clear, cold light quickly showed up even the faintest trace of undesirable color.

But an "overcast northern sky" is not always available when it's needed. And in Armstrong's laboratories, where research in glass is going on all the time, it was important to have a convenient method for checking experimental glass for color.

So Armstrong's research men brought a patch of the northern sky indoors! They designed and built a simple "viewing box" which exactly reproduced the revealing northern light. By scientific combination of the proper light sources, diffusion surfaces, and reflecting materials, they created a nonglaring, uniform, high-precision light. Now bottles can be checked for color purity any time, at the flip of a switch, in Armstrong's laboratories or glass factories.

This "viewing box" is a modest example of the ingenuity with which Armstrong's research men solve the practical problems of glass control. This type of skill, backing up long years of technical training and experience, helps account for the success of Armstrong's chemists, engineers, and physicists in making and keeping Armstrong's glass top quality.

Further interesting sidelights on the skill and experience that go into the making of top-quality glass are contained in Armstrong's illustrated book, "Men and Glass." For your free copy, write to the Armstrong Cork Company, Glass and Closure Division, 3805 Prince St., Lancaster, Pennsylvania.

ARMSTRONG'S GLASS

and **ARMSTRONG'S CLOSURES**

The Cosmetic Trend

Maybe it is the spring, or the inconclusiveness of last winter's Southern season as a fashion indicator, but buyers are talking more frequently about fashion trends for cosmetics these days than they have done for months, if not years. The point is made that fashion trends have their uses. They shift customer attention from one group of articles to another at convenient intervals and, where clearly definable, certainly make it easier for the average buyer to pick a real winner.

When buyers talk of fashions they generally do not mean just changes in the shade of lipsticks etc., but also that peculiar something that brings to the foreground such articles as hair lacquers, facial masks, cake make-up, cosmetic stockings, which build remarkable profits for the toilet goods counters.

Once in a while a manufacturer can place himself in a position where he creates fashion trends. Actresses have been known to do it and some of the outstanding fashion successes among the cosmetics have been due to the enterprise of an unknown beauty specialist. However, the always reliable source of a new cosmetic fashion in the past used to be Paris and, even if it had originated somewhere in these United States, Paris was a good place to pin it on. Besides, there is no denying the fact that the returning tourists in pre-war days had a stimulating effect upon the buying urges of the rank and file of the cosmetic trade.

Buyers understand, of course, that the cosmetic industry is doing the best it can these days to keep the counters supplied and that this is hardly a time to encourage change. However, post-war conditions are discussed and buyers are asking, whether the industry (or individual manufacturers) have anything new to offer to the post-war cosmetic customer.

As one leading buyer sees it, there has been a steady growth in the consumption of cosmetics through recent years supported by the increased purchasing power of the consumer and the real need for cosmetic aids discovered by millions of working women who formerly thought of them as a luxury or convenience. However, the upswing of the curve is bound to reach a culminating point after which new sales arguments must be found to maintain the customers' interest. A return to pre-war promotional methods, based on seasonal fashion changes, is suggested.

A cosmetic fashion, to be of any service to the store counters, must be widely accepted. It must either have the general support of the cosmetic industry, or it must be the result of a widely spread social condition such as the impetus given to cosmetic sales by the war-employment of women.

Doubtless, fashion trends will reassert themselves, once the restrictions, put upon them by material-shortages are removed. At any rate, cosmetic buyers are getting increasingly fashion conscious and there seems little question that anything that looks like a "trend" will be readily picked up and given a try-out upon the counters.

same outlets, namely, department and drug stores, and beauty salons. Its golden black label is similar to that of the companion cream. Four ounces retail for $1.

Boxes Again

As we go to press, we understand that the dentifrice boys are hoping to get an AA 3 instead of an AA 5 and that the cosmetic boys are trying to get a bit of simplification into the order on set-up boxes. Seems that they didn't object so much to the cut, for they apparently were well aware of the present seriousness of the paper and paperboard situation, but they did find fault with some complications of the order as written. Both the dentifrice order and the cosmetic order will doubtless be out before this appears in print so we won't go further into it now.

However, at the dentifrice meeting, George H. McGowan, Paperboard division WPB did say something of interest to all cosmetic manufacturers who can apparently hope for nothing better than AA 5. "He denied emphatically," according to the report of the meeting, "the rumor that only the first 3 rating levels will get shipping containers; the WPB does not allocate for certain ratings at all, but allocates amounts to manufacturers which they must use in filling their schedules. It is not true that manufacturers whose ratings are not all AA 1's cannot get board; nor is it true that a customer with an AA 5 rating cannot get boxes, although he may experience some delay in getting deliveries."

Collapsible Tubes

At a dentifrice advisory meeting, Robert J. Small, of the Containers division WPB said that there were three reasons for the January 10 amendment to M-115 permitting the use of aluminum for tubes. He said that these reasons were, according to the official report of the meeting, "to save tin; to increase the production of tubes; and to put ALCOA, which had been out of production because of lack of aluminum, back into production."

Colored Cosmetic Stockings

Just in case you're looking for a new product to add to your line or just a little something to sell as a specialty, we give you, and without extra charge, colored cosmetic stockings. Thus you could offer stockings to suit the mood, or match the shoes, or contrast with the skirt or do any one of a half dozen other things. After all, we have had green nail enamel and black lipstick and only last fall practically all of the high style stores went for colored fabric stockings in a big way. We're not so sure that the consumer response was so big but then maybe they were just a little ahead of their time.

Marketing Opportunity

Your favorite columnist and ours, Ernie Pyle, writing from the Anzio beachhead under date line of April 17, gave out with the following testimonial which shows what might be done with product claims if the F.T.C. weren't so fussy.

He said, "About a year ago I wrote an item about the numerous uses we'd found for the brushless shaving cream which is issued to front line troops.

"Its virtues are legion. It is perfect for sun and windburn, nurses shampoo their hair in it, it soothes fleabites and softens chapped hands and cracked fingers. And now the soldiers have discovered that if they'll massage their feet with it once a day it goes a long way toward preventing the dreaded trench foot.

"It's a shame somebody doesn't shave with it once in a while."

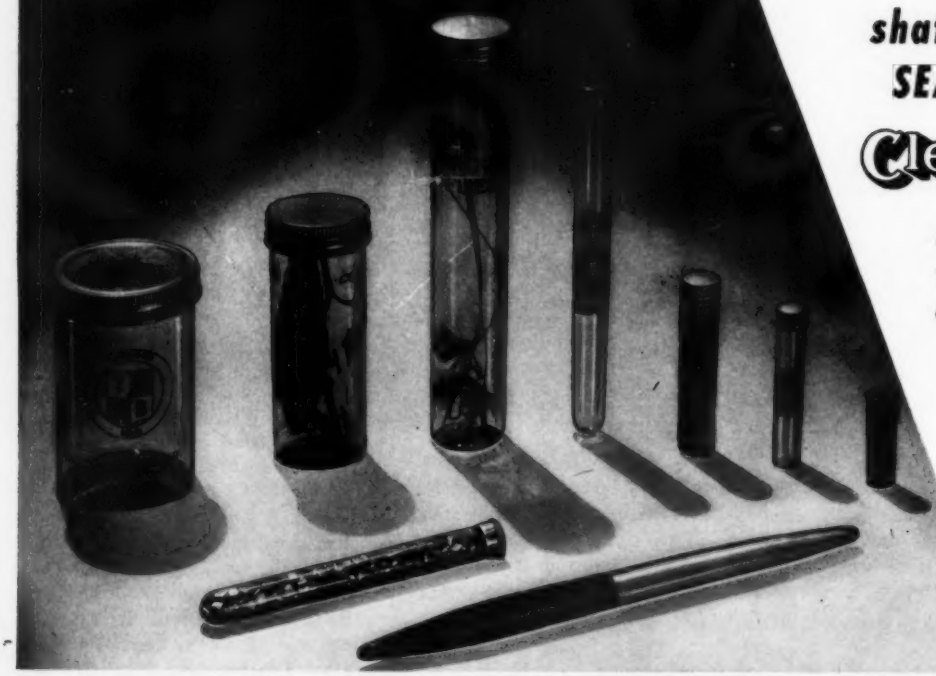
IN BATTLE
OR
BUSINESS.

Army campaigns demand ALL the facts, and get them by radio and messenger before and during campaigns. Photo U. S. Signal Corps.

GET **ALL** THE FACTS
Before YOU PLAN YOUR CAMPAIGN

You get better packaging—
MORE FOR YOUR PACKAGING DOLLAR
with

shatterproof
SEAMLESS
Clearsite *



Available in all sizes with labeling processed *direct* on containers in process of manufacture.

Our Technical Staff is always at your Service

* Reg. U. S. Pat. Off.

CELLUPLASTIC CORPORATION

FIRST IN CELLUPLASTICS
HYCOLOID-CLEARSITE

60 AVENUE L NEWARK, N. J.

The Big Ones Are the Easiest

The other day we were talking to a man who started with a few dollars and in less than two years had a profitable, fairly large-size business. The thing that puzzled us, we told him, was how he built so quickly against competition, particularly a large well-entrenched company.

"What you don't get," he said, "is that the big ones are the easiest. My luck was in not having an alert small competitor."

If you are interested, as we were, in this man's analysis, here it is as he told it:

First, advertising: My well-entrenched competitor was spending at least twenty times more than I had. They had been spending a large sum for several years, had gravitated to a large, plate glass national agency, had pretty pictures in all the national magazines the best people are supposed to know. Actually, their salesmen had been taking the advertising for granted for a couple of years. Most of the buyers just weren't getting around to reading the best women's magazines and as a result the stores had a very vague spotty notion of this company's publicity. But I had to make my few dollars do double and triple duty. I stressed direct, cooperative tie-up, not a seasonal slap or sale for the store, but a sustained program. That is what 99 plus per cent of the stores believe in, know how to use and are repeatedly making work. To get a national background, which has some intangible, never analyzed, value in the minds of many buyers, I bought two insertions in two consumer magazines and then used every month in a trade magazine, the finest, class consumer advertisements I could have prepared. You should have heard me holler to the trade about the way I backed my really effective newspaper campaign with national magazine advertising. Did it work? Look at my business and then ask some buyer who is the biggest advertiser in this part of the trade.

Second, distribution: The toughest problem that comes with success and growth is popularity, I mean with new stores. Anybody who can sell and do a good job in the top-drawer stores, has literally most of the other alert distributors on his neck. This includes wholesalers, chains—good and bad—and the cut-rate drug stores, etc. Very few manufacturers can resist the pressure, or at least adhere to a clean cut picture. My competitor had added a lot of stores that were not too bad but there were too many. Of course I had no limitations here. I could wade into the good stores, the ones who really can sell merchandise, and show them that I was the only one doing really substantial advertising who realized that a leading store had a pretty big trading radius and that, when a buyer started a new customer, he was entitled to the repeat business. This argument is a potent punch because there really is a strong element of truth in it. No advertising was ever invented that could equal the effectiveness of a good store in selling their neighborhood. And no store, worth anything as a merchandiser, has the same interest in building or sustaining a product that can be picked up anywhere, as they have in a product that gives them a substantial repeat business.

Third, dealer relations: This is another problem that becomes tough with size and popularity. When I was doing a fair job, stores asked very little from me that was unreasonable. The initiative to do more all came from me. But the big company in the limelight is under constant pressure. Stores compete for favors and this competition can resolve into pretty tough pressure on a manufacturer. About this time also, the manufacturer begins to realize that while he may be the seller, he is no longer the humble seller. Particularly, when big chains come in with big checks, letters flow in from drug stores asking for goods, indirect pressure starts to let Joe Gink have the line, then sometimes the manufacturer forgets that he is the seller and believes he's the gracious donor.

Some men think this is when they should walk a tightrope keeping a careful balance; others act like old-world diplomats, playing one off against the others; and some think being the artful dodger is the clever way. It takes a good man to set a clear, honest fair policy and stick to it like glue. It takes a better man to realize that behind all the bickering, threats, pleas, etc., is a growing respect and liking for a fair policy, rigidly held. But the best man of all is the one who can hold such a policy and forever refrain from using his power to bully a store into an advantage for him but a disadvantage for the store.

That is where I came in. This big fellow had a fair policy and more or less held to it. There was no real complaint there but he could not help showing that he was it, and in many ways, some subtle, some not, he had the store take it and like it.

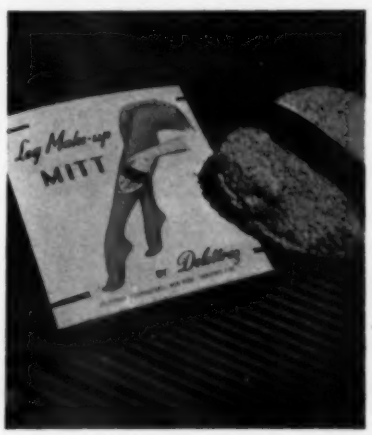
You would be surprised how many stores were waiting for me to arrive. I just had to prove I was the right fellow.

Leg Make-Up Mitt

A leg make-up and applicator in one is Delettrez' contribution to the realm of cosmetic stockings. Delettrez is introducing a leg make-up mitt, inside of which is leg make-up in dry form. This turns creamy when wet. According to Delettrez, there is no spillage, no messiness either on hands or legs.

Cosmetic Stocking Set

Cosmetic stocking preparations can only be attractive and successful if they are applied to de-fuzzed, smooth legs. It is interesting to note that Maison Jeurelle-Seventeen, Inc. has taken advantage of this in its new two-piece set for grooming the legs. It consists of Seventeen Skinthetic leg make-up and Seventeen cream lotion. The leg make-up comes in two shades, light and dark, and is a creamy liquid which does not streak, rub off on clothing and is waterproof in the rain, according to Jeurelle. The cream lotion is a skin softener, which is suggested for use at night after removing the leg make-up.



● When rapid-firing guns get hot, they get thirsty. If they get too dry, they're likely to freeze, jam up.

That's where the can comes in. It carries oil—all kinds of fine lubricants that protect delicate mechanisms. Not only guns, but planes, tanks, jeeps.

Which brings us to your next new car. New and better oils will be needed to guard its operation. If we know the oil industry, they'll be ready. And you'll get these oils in refinery-sealed cans—the exact grades and brands you want, completely protected.

Many things will soon be back in cans—beer, coffee, shortening. There'll be new things in cans, too. As war is proving, the tin can is the best all-around container . . . strong, safe, convenient.

We're doing a lot of research today. Not just on cans, but on products. Many of our discoveries for war someday will be mobilized for peace . . . so that in the years to come you'll enjoy *new and better things in Continental cans.*

NOTE TO MANUFACTURERS: We will be glad to discuss future uses or improvements of your product or package, and to help you in post-war planning. Write to our Post-War Planning Department, 100 East 42nd Street, New York City 17, N.Y. or Continental Can Company of Canada, Limited, Montreal.

SAVE TIN CANS—HELP CAN THE AXIS

CONTINENTAL CAN COMPANY

NEW AND BETTER THINGS IN CONTINENTAL CANS

Awarded to Plant 75, Chicago • Illinois

All Plastic

ROUGE,
PERFUME
and
MAKE-UP BOXES

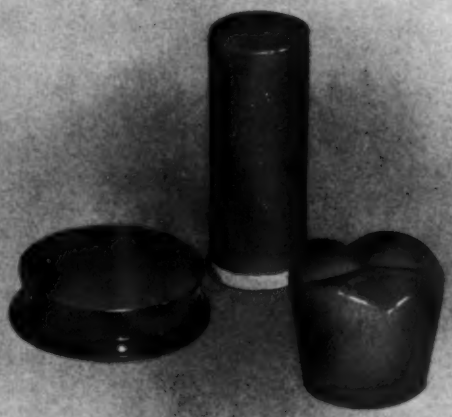
ILLUSTRATIONS ACTUAL SIZE

WIRE OR WRITE
FOR SAMPLES

HARRY BRODER
AND ASSOCIATES
5 EAST 47th STREET
NEW YORK 17, N. Y.
PLAZA 8-0520

CONTAINERS and CLOSURES

by Fontaine



The beauty and dependability of plastics and wood in perfume and cosmetic containers have been proven by the enthusiastic response to the Fontaine line.

The Fontaine Lipstick Container

A swivel-type, thermoplastic lipstick container with patented features, specially designed. The cover slips on and off smoothly and is held firmly in place by a small flange at the base. Two-color combinations, if desired.

Other Fontaine Products

Closures . . . Rouge Boxes . . . Perfume and Cosmetic Specialties . . . in a variety of designs, sizes, and colors . . . made to your specifications in catalin—or wood, if desired.

FONTAINE
PRODUCTS CORP.
Art in Plastics
306 EAST 61st STREET • NEW YORK, 21

a new finishing technique

An exclusive development in the technique of lacquer spraying, created in our own laboratories, now provides a unique handling of your finishing problems. Designed for spraying wood, metal, plastics in any specified color, it is ideal for bottle caps, jar covers, compacts, and all types of specialty items for the cosmetic and perfume industry.

Our spraying department is at your service. *Write for detailed information.*

CONTAINER FINISHING
COMPANY
AN AFFILIATE OF FONTAINE PRODUCTS CORP.

1111 LEXINGTON AVENUE, NEW YORK, 21

The Bottle's Treasure Story

That's a Treasure in the bottle, all right! What's a bottle? Well, it's a designed container, with a certain capacity, and musn't dissolve as a result of what it is to hold. It's made of glass, of course. What's glass? Glass is a hard, brittle, generally transparent substance. It comes from fusing together a silica, like sand, with an alkali, as potash, plus a base, like lime. What's a treasure? Well, that may be anything. It may be your health or your girl or your collection of guppies.

Mr. Slowey, of Glass Container & Cap Outlet Company, says you have another treasure: That useless accumulation of odd containers of ANY kind — glass or otherwise — which clutters up stock rooms and warehouses. He'll pay Cash, naturally, and says Size or Quantity do not matter. Same offer follows for bottle caps. ANY kind of caps.

Contact him now for profitable results. Nobody refuses a Treasure!

GLASS CONTAINER & CAP OUTLET COMPANY
876 BROADWAY NEW YORK 3, NEW YORK

LUSTEROID

"PORTABLE SHOWCASES" PROTECT and DISPLAY YOUR PRODUCTS

For smartness, safety, savings and sales, you can rely on colorful, crystal-clear LUSTEROID vials and tubes to fill your post-war packaging needs.

These "portable showcases" reflect the quality of your product while protecting it from factory to consumer.

Consider these LUSTEROID advantages. Amazing light weight. Strong, rigid, unbreakable. No protective partitioning or special packing needed. No labels to affix. Lower shipping and handling cost. Choice of all colors—clear or opaque. Diameters from ¼" to 1¼". Lengths up to 6". Cork, slip-on or screw-cap closures.

Write for complete facts today.

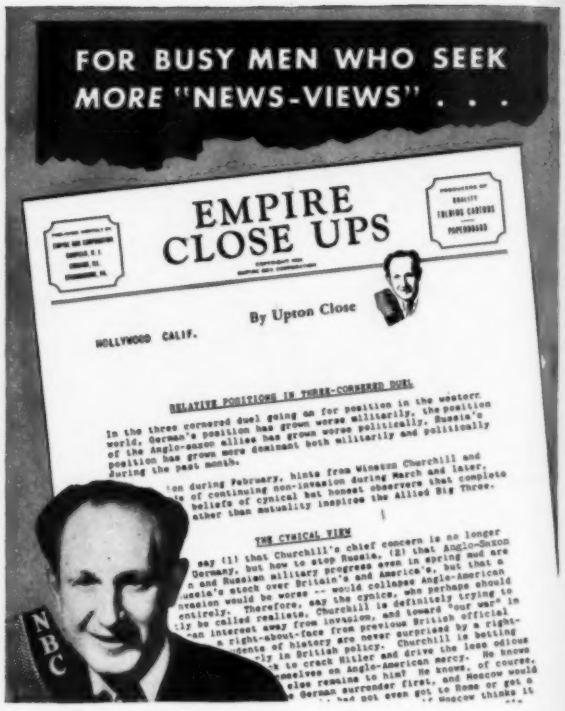
LUSTEROID CONTAINER CO., INC.

Formerly Lusteroid Division of Sillcocks-Miller Company

Office and Factory

10 W PARKER AVENUE MAPLEWOOD, N J

MAILING ADDRESS SOUTH ORANGE, N J



Empire's Monthly News-Analysis by UPTON CLOSE

"EMPIRE CLOSE UPS" give the users of folding cartons a sharp picture of wartime news as interpreted by UPTON CLOSE—prominent news-analyst who writes this monthly digest as a *timely* Empire service.

For, *service* is the spirit of Empire, *at all times.* It is one of the advantages that Empire, as a leader, offers along with the latest developments in modern packages.

If you are a user of folding cartons, have Empire "preview" your postwar package problem. And, to get UPTON CLOSE's "news-views," just write your request for "EMPIRE CLOSE UPS" on your company letterhead. No obligation.

★ *Empire* ★

BOX CORPORATION

OFFICES:
GARFIELD, N. J.
PALMOLIVE BUILDING
CHICAGO, ILLINOIS

LOOK TO THE FUTURE WITH EMPIRE

PLANTS:
GARFIELD, N. J.
SOUTH BEND, IND.
STROUDSBURG, PA.

Solve Your Problem . . . Seal Your Package with

DODGE TAPER CORKS

WOOD, metal and plastics—closure materials formerly available in unlimited quantities—are on the critical list. But you *can* get the ideal alternate closure.

Dodge taper corks will successfully meet your packaging needs until your preferred closures . . . Dodge Milbossed Top Corks*, for example . . . are again available.

Dodge can supply standard size taper corks for various sizes and styles of glass containers. These uniform, true-to-grade corks have excellent sealing properties . . . can be depended upon to "guard the integrity of the contents."

Keep your output up . . . be sure of ample closure supplies and prompt delivery. Write Dodge about taper corks . . . specify types, sizes and quantities needed.

DODGE CORK COMPANY, INC., LANCASTER, PENNA.

*Dodge is developing a new Milbossed Top Cork, utilizing a material which will replace wood. Until this is available, Dodge taper corks will provide a satisfactory and reliable alternate.

DODGE CORK *Closures*

Designed to Guard the Integrity of the Contents

Plastics will be back again - SOME DAY SOON

Soon, now, you'll again be able to hitch your sales plans to the time-proven sales appeal of Plastic Packaging. But not without planning today. For whether you're interested in custom-created containers involving special molds or specialties from our stock molds . . . in containers for cream rouge, dry rouge, mascara, face powder or lipstick . . . others are already planning design and contracting for production.

We're still concentrating on war work — but we've got one eye on the future. Why not talk over your post-war packaging plans now with the name that has stood for Plastic Packaging since we originated the screw-type Plastic Rouge Box? No obligation.

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For over 25 years Planners and Molders in Plastics

Kurz-Kasch, Inc., 1421 South Broadway, Dayton, Ohio
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METAL · EMBOSSED
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SPRINKLER TOPS

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CONSOLIDATED
FRUIT JAR COMPANY
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MODERN COSMETICS

by

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Chemist, factory manager, perfumer, owner—anyone interested in cosmetics will find this book a valuable help in business. It is a technical book, filled with formulas, procedure, manufacturing practices, yet so clearly and simply written that even one not connected with the industry can understand its text.

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BY UTILIZING THE DISPLAY ADVANTAGES OF THE GLASS PACKAGE

Trim, modern, lustrously clean, the glass container increases the eye appeal of your products. Glass is highly sanitary, is impervious to most products, and, by showing the consumer what he is getting, inspires confidence and promotes acceptance of your brands. Standard stock glass containers of sparkling amber or crystal glass should be combined with labels of attractive design. And select the closure with care; not only its appearance, but its ease of removal and resealing influence consumer preference. For glass packages at their gleaming best, use Anchor Hocking containers and closures—practical, sturdily protective, convenient, and precision-made to "spotlight" your brands in the competition for attention on dealers' shelves.

"Meet Corliss Archer" every Saturday afternoon, entire coast-to-coast network CBS

W. M. SULIBURK, one of Anchor Hocking's ablest and most popular men, has been a member of the Anchor Hocking family for 15 years.

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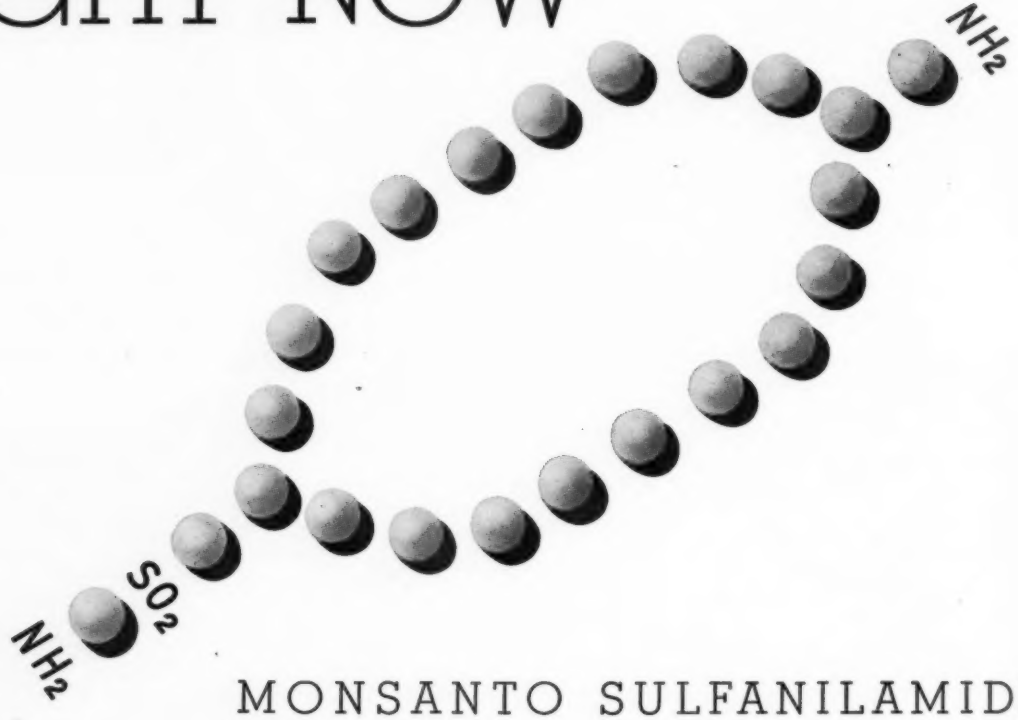


MONSANTO SULFANILAMIDE

Pharmaceutical supply houses now can get immediate delivery of Monsanto Sulfanilamide, U.S.P. (para-Aminobenzene Sulfonamide) for use in pharmaceutical preparations or veterinary medicines.

Monsanto's medicinal-grade Sulfanilamide, the result of planned research, is uniformly high in purity. It is made under the strictest manufacturing controls and laboratory checks are made constantly upon production samples. Monsanto Sulfanilamide is available in 30-80-mesh crystals and 100-mesh powder.

We shall be pleased to send technical details, prices and samples to pharmaceutical supply houses requesting them. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Montreal, Toronto.

MONSANTO CHEMICALS
SERVING INDUSTRY...WHICH SERVES MANKIND

If you are interested in the history of Sulfanilamide, ask for this non-technical leaflet. It is free.

NEWS

People

Campbell Retires

Walter G. Campbell retired as Commissioner of Food and Drugs on April 30, it has been announced by Paul V. McNutt, Commissioner, Federal Security Administration. He became Chief Food and Drug Inspector in 1907 when the Food and Drug Act of 1906 became effective and in 1927 organized the Food and Drug Administration which he has directed ever since. When the administration was transferred from the Department of Agriculture to the Federal Security Agency in 1940 he was made Commissioner of Food and Drugs.

It is reported that Mr. Campbell has suggested that Dr. P. B. Dunbar, Associate Commissioner, be his successor

WALTER G. CAMPBELL

but in other quarters it is thought likely that either Dr. James J. Durrett, Medical Advisor to the Federal Trade Commission or Robert P. Fischelis, chief of the medical and health supplies branch of the Office of Civilian Requirements, may succeed to the position.

Commissioner Campbell has been connected with Food and Drug Law enforcement ever since the federal government began to regulate interstate commerce in these commodities.

Dr. Dow Receives Medal

The Gold Medal Award of the American Institute of Chemists for the year

DR. WILLARD DOW

1944 was presented to Dr. Willard Henry Dow, president of Dow Chemical Co., at a dinner at the Hotel Biltmore, New York, May 13. The dinner which brought to a close the annual meeting of the institute was preceded by a reception to Dr. Dow and guests. Dr. Gustav Egloff, president of the American Institute of Chemists and director of research, Universal Oil Products Co., presided. The speakers were: Col. Bradley Dewey, Rubber Director, War Production Board—"Dow and the War Effort;" Dr. Mark E. Putnam, vice-president, Dow Chemical Co.—"Willard H. Dow—the Man;" Sidney D. Kirkpatrick, editor, "Chemical and Metallurgical Engineering"—"Willard H. Dow—the Chemist."

Farewell Party to Veazey

J. A. Veazey, assistant manager of the St. Louis office of Merck & Co., was given a farewell dinner by the St. Louis Drug Chemical and Allied Trades Association on March 21. The occasion was Mr. Veazey's departure for Los Angeles to manage Merck's new branch.

Wiltsee 50 Yrs. with Merrell

Lee Wiltsee, vice-president, treasurer and a director of The Wm. S. Merrell Co., Cincinnati, celebrated the com-

LEE WILTSEE

pletion of fifty years of service with the company on April 18.

Mr. Wiltsee started to work at the Merrell company in 1894 as an order clerk and was successively shipping clerk, bill clerk, stenographer, bookkeeper, traveling salesman, manager of branches in New Orleans and New York, and general sales manager, before assuming his present position.

He is also vice-president and a director of Loeser Laboratory, Inc., a Merrell subsidiary.

Leonhardt 50 Yrs. with Fritzsche

Frederick H. Leonhardt, president of Fritzsche Brothers, Inc., New York, was guest of honor at a dinner cele-

FREDERICK H. LEONHARDT

brating his fiftieth anniversary with the company, held in the Grand Ball Room of the Hotel New Yorker, April 15. The dinner, followed by a dance, was given by the executives and directors and was attended by nearly 275 persons, comprising the company's entire personnel, including representatives from all of the branch and Canadian offices.

Mr. Leonhardt became associated with Fritzsche Brothers in 1894 in the chemical laboratory. In 1919 he was

made vice-president and following the death of the late F. E. Water meyer, he was elected president. During his administration the company has enlarged the scope of its activities considerably. The factory at Seillans, France, was enlarged and modernized and full ownership of the Clifton, N. J., plant was brought about. Following a fire in 1935 which destroyed the Beekman St. plant, the company was moved to its present streamlined quarters in the Port Authority Commerce Building, New York.

George L. Ringel, vice-president of the company, acted as toastmaster at the dinner and gifts were presented to Mr. Leonhardt by the employees, executives and directors of the company. Mr. Leonhardt presented each of the employees with a government bond.

Andre Wick, president of Houbigant, presents Joseph Alexander with a $1,000 War Bond upon his completion of fifty years with the company. Members of the Quarter Century Club, each of whom received a diamond studded wrist watch look on. They are Frank Lupman, Helen S'kahill, Pearl Christ, Louise Couillou, Mae Anderson, and Helen Kennedy. Esther Browning, Lucy Parker and Julia Smith were unable to be present.

Grove Traffic Mgr. Honored

At a testimonial dinner March 31, Grove Laboratories, Inc., St. Louis, honored its traffic manager, Victor J. Graffigna, who, on April 13 completed fifty years with the company. He was given a gold watch and a thousand dollar government bond.

Mr. Graffigna started his career with Grove's, then known as the Paris Medicine Co., at the age of twelve. His first assignment was a job in an old stable located in an alley, making wash blue in a mortar box with a hoe, at a salary of $2.50 per week. When he was fifteen he was theoretically head of the bottling department, making all syrups and doing all the bottling.

The occasion also honored other employees of Grove Laboratories, twenty-five of whom have been with the company more than twenty-five years. Other employees who have been with the company more than five years were given service pins.

Haggerson Heads Carbide

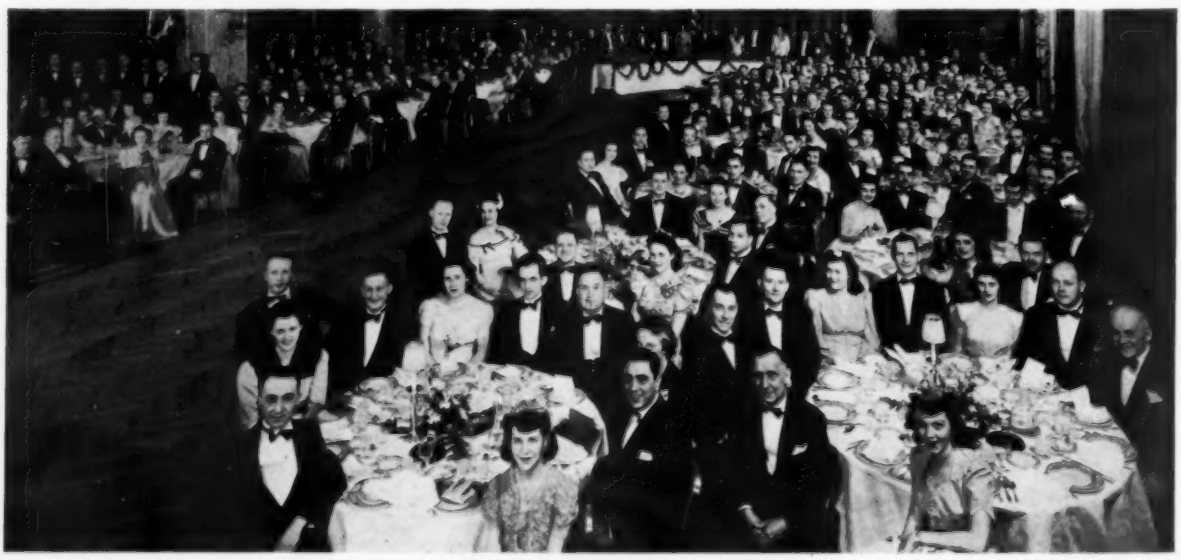
Fred H. Haggerson has been elected president of Union Carbide and Carbon Corp., succeeding Benjamin O'Shea who has been president since 1941 and now becomes chairman of the board. Mr. Haggerson who was formerly vice-president and a director has been associated with the corporation for twenty-five years.

R. G. Peck Jr. Back at Aridor

R. G. Peck, Jr., who has been serving in Washington for the past seven months in an advisory capacity with the glass container and closure section of the container division of the War Production Board, has returned to the Aridor Co., Chicago. Mr. Peck is vice-president and assistant general manager of the company.

American Can Appointments

American Can Co. has announced the appointment of H. C. Hopkins as general manager of purchases and of Jesse Howard Hamilton as assistant manager of sales, Pacific division, with headquarters in San Francisco.



Testimonial dinner in honor of Frederick H. Leonhardt, president of Fritzsche Brothers, Inc., on the fiftieth anniversary of his association with the firm.

Spencer Assistant Sales Manager

Lowe Paper Co., Ridgefield, N. J., has announced the appointment of Robert C. Spencer as assistant sales manager.

For the past year, Mr. Spencer has been with the War Production Board at Washington serving first in the War Products Development Section of the Pulp and Paper Division and later as

ROBERT C. SPENCER

chief of the Boxboard Section of the Paperboard Division.

In the newly created position, he will be concerned with the mill's sales plans and post-war activities and will report to Malcolm B. Lowe, vice-president in charge of sales. WPB is retaining Mr. Spencer as a consultant to the Paperboard Division and he is subject to call in an advisory capacity.

Vernet—Affiliated V. P.

Waldemar Vernet has been elected vice-president of Affiliated Products,

W. VERNET

Inc., cosmetic manufacturing and merchandising subsidiary of American Home Products Corp., it has been announced by William H. Wulfleff, vice-president of American Home.

Mr. Vernet was connected with Mystic Laboratories when Affiliated acquired that company in 1936, and continued in a sales executive position with the latter company.

Kalish Joins Revlon

Joseph Kalish, formerly technical editor of DRUG AND COSMETIC INDUSTRY, and more recently associated with Evans Chemetics, is now engaged with Revlon Products Corporation as a cosmetic chemist.

Stieh Heads Metal Salts

William M. Stieh has resigned as vice-president and a director of F. W. Berk & Co., New York, to become president of the Metal Salts Corp., a new organization which has temporary offices in the People's Trust Building, Hackensack, N. J.

Dow Appoints Dixon

W. R. Dixon of The Dow Chemical Co. has been appointed assistant manager of the company's plastic engineering division. He joined the Dow organization in 1936 and, after completing the general plant training course, was assigned to cellulose products division where he worked for two and a half years. In 1939 he was transferred to the New York office to handle cellulose products in the eastern territory. In 1941 he was recalled to Midland to work on the company's wartime plastic projects in consultation with Washington authorities.

Penick Appoints Field Manager

S. B. Penick & Co., New York, has appointed J. Walker Copley its field production manager for American crude drugs. In 1942 W. W. Bell, head of the domestic crude drug division of the company began the cultivation of belladonna in this country with Mr. Copley as field superintendent.

In his new post Mr. Copley will have charge of the company's drug farms, will superintend the gathering of wild drug plants through collection depots and will, in short, coordinate the company's domestic production of botanicals and allied products.

Hills Leaves Northam Warren

David B. Hills has resigned from the Northam Warren Corp., Stamford, Conn., where he had been designer and purchasing executive for several years. Mr. Hills has opened a workshop at 274 Madison Ave., New York, and will specialize in the creation, development and manufacture of selling aids, including three-dimensional counter displays, lithographed displays, packages, and printed advertising material.

Peet and Reilly Vice-Presidents

Roy W. Peet and James A. Reilly have been elected vice-presidents of the Colgate-Palmolive-Peet Co., Jersey City.

Mr. Peet has been associated with the company for twenty-five years. He was educated at the University of Missouri and Harvard and began his business career with one of the component companies, Peet Brothers,

ROY W. PEET

Kansas City, Kansas. He has served Colgate-Palmolive-Peet Co. as assistant advertising manager, advertising manager, director of advertising, and assistant to the president, E. H. Little.

Mr. Reilly has been with the company twenty years, and has held a number of positions, all of them in the sales department. His new title is vice-president, manager soap sales.

Barr Expands

George Barr, president of G. Barr & Co., Chicago, has announced that

GEORGE BARR

Frederic J. Trump has been made vice-president and Lawrence H. Fowler general advertising manager. Mr. Trump has been general sales manager while Mr. Fowler comes from Butler Brothers where he was advertising manager.

The company has opened a downtown office at 30 East Adams St., Chicago, and is planning a New York office.

IT "HOLDS UP"

LIGHT – STABLE
MAINTAINS CONSTANT VISCOSITY
PRODUCES CONSISTENT RESULTS

From the original formulation to the actual application in your product, Methocel is stable. Its rugged film-forming qualities—its wide viscosity range and chemical compatibility—"hold up" under the most exacting requirements. Whether in its original solid form or in liquid, Methocel maintains constant chemical stability. Odorless, colorless and nontoxic, this water soluble material is also resistant to alkalies, dilute acids, fermentation and mold growth.

METHOCEL

THE ECONOMICAL, WATER SOLUBLE THICKENER

Continuous films that can be obtained upon drying emphasize the wide range of usefulness of Methocel in cosmetic and pharmaceutical products. Particularly in protective hand creams, cosmetic stockings, and hair lacquers, this pliable, protective film-forming ability is proving advantageous. This property is rarely, if ever, found in other water soluble thickeners.

Methocel is nontoxic, chemically stable and resistant to mold. Investigate its possibilities for use in your product. Write Dow Technical Service for further details.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit
Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle

METHOCEL

Among the many Dow Products serving the Cosmetic Industry are: Synthetic Aromatics, Dowicides, Propylene Glycol and Paradow.

DOW
CHEMICALS INDISPENSABLE
TO INDUSTRY AND VICTORY

Grove Vitamin Division

A separate vitamin division has been organized by Grove Laboratories, Inc., St. Louis. V. R. Burtch, field manager of the company, has been named sales manager of the new division, and a sales organization, trained in vitamin therapy, has been formed to do a specialized job of selling and merchandising the Grove vitamin line. An advertising ap-

V. R. BURTCH

propriation of $1,700,000 has been set up for this new division.

Appoints Blackstead

The Ansbacher-Siegle Corp. has announced the appointment of Eric N. Blackstead as sales and advertising manager.

Mr. Blackstead started his career with the Spencer Lucas Co., manufacturers of dry colors, in 1922. At the age of nineteen, he was chief chemist of that organization. In 1928 he was made chief chemist of inorganic colors in the Brooklyn plant of A. B. Ansbacher Co., prior to its consolidation with the Siegle

ERIC N. BLACKSTEAD

Corp., whose plant was located at Staten Island. For a few years following the consolidation, he was located at the Staten Island plant. He was later appointed resident representative in New England with headquarters in Boston. He now returns to the main office at Rosebank, S. I.

Coutinho Elected President

Dr. Henri Coutinho has been elected president of the Perfumers Manufacturing Corp., New York. He has been connected with various phases of the cosmetic industry in Paris and New York for nearly twenty years and was most recently associated with George W. Luft Co., Long Island City, as research director.

Dr. Coutinho was educated at several European universities and early in his career began to specialize in cosmetic formulation and control.

Sobell on Advisory Board

Dr. Otto H. Sobell, technical director of the J. R. Watkins Co., Winona, Minn., has been elected a member of the American Society for Testing Materials and was appointed a member of its committee on soaps and other detergents. Dr. Sobell also serves on the advisory committee of the War Production Board for household and industrial insecticides and disinfectants. He succeeded Dr. E. G. Thomssen as technical director last December and the latter was transferred to New York to handle the company's business of supplying products for the army, navy and lend-lease.

Barlow-Maney Labs. Formed

Barlow-Maney Laboratories, Cedar Rapids, Iowa, has been formed to manufacture and distribute ethical pharmaceutical products. Arthur Barlow is president of the new company.

Lescohier Heads ADMA

At the annual convention of the American Drug Manufacturers Association, held at Hot Springs, Va., the first week in May, Dr. A. W. Lescohier, president of Parke, Davis & Co., Detroit, was elected president of the association. Other officers elected were: John S. Zinsser, Sharp & Dohme, first vice-president; Robert Lincoln McNeil, McNeil Laboratories, second vice-president; Carleton H. Palmer, E. R. Squibb & Sons, third vice-president; and Donald S. Gilmore, the Upjohn Co., treasurer. New members of the executive committee are John G. Searle, Fred Lawson and M. C. Eaton. S. DeWitt Clough, former member of the executive committee, was elected to the advisory council.

W. J. Bush (Canada) Changes

M. St. Alphonse, vice-president of W. J. Bush & Co. (Canada) Ltd., Montreal, has announced the following changes in the company's organization. A. Reddington Samuels who has been manager of the Toronto branch since 1940 has been transferred to Montreal to assume the duties of general sales manager.

A. REDDINGTON SAMUELS

Thomas L. Smyth, who has been manager of the company's Winnipeg branch for the past six years, succeeds Mr. Samuels as manager of the branch in Toronto, and Gordon A. Lemm has been appointed manager of the Winnipeg branch, succeeding Mr. Smyth. Mr. Lemm joined the company in 1932 and has served in several branches of the company.

Continental Can Revises Territories

W. H. Funderburg, vice-president in charge of sales, Continental Can Co.,

T. C. FOGARTY

Inc., has announced a revision of sales territories.

Thomas C. Fogarty, formerly district sales manager, has been made general sales manager of the new eastern division, comprising the Atlantic seaboard from Maine to Florida with headquarters in New York. Mr. Fogarty has

Kolmar's contribution

is two-fold. We contribute naturally to the *esprit de corps* of America's womanhood. Kolmar's rouge, powder and lipstick help to keep up the morale on the home front. BUT .... Kolmar is also making a definite and important contribution to the war effort. Some day we hope to tell you about that too. Yes . . Kolmar is fighting on both fronts.

Manufacturers of Private Brands only

Rouge Powder Lipstick

Milwaukee, Wis. Port Jervis, N. Y.

Representatives

Mr. M. C. Boyd,
Mr. Douglas Haggerty,
Empire State Building,
Room 605, New York, N. Y.

Mr. Warren Curry,
2504 Alton Road, N. W., Atlanta, Ga.

Mr. Norman Kole,
960 Merchandise Mart, Chicago, Ill.

Mr. R. F. G. Byington,
1260 N. Western Ave., Los Angeles, Cal.

Mr. Richard F. Spicker,
419 West Fifth St., Cincinnati, Ohio

been a member of the Continental sales organization since 1929.

Reuben L. Perin, since 1942 general sales manager of the Pacific division, will head the new central division, extending from Canada to the Gulf, making his headquarters in Chicago. Mr. Perin has been associated with the can manufacturing industry ever since his graduation from the University of Cincinnati in 1924.

Frank E. Falk succeeds Mr. Perin as general sales manager of Continental's Pacific division, extending from Canada to Mexico, with headquarters in San Francisco. Mr. Falk is a newcomer to Continental but has served since 1938 as vice-president and general manager of the Vincennes Packing Corp., Vincennes, Ind., and previously, as Pacific coast manager of J. B. Inderrieden Co.

Solon M. Palmer in Army

Solon Maxfield Palmer has resigned as secretary and sales manager of Solon Palmer Perfumer, New York, to enter the Army of the United States. He is the son of Lubin Palmer, president of the company.

Tobin Made Vice-President

Walter V. Tobin has resigned from the Allied Purchasing Corp. to become vice-president of Hirestra Laboratories, New York, makers of Endocreme and other beauty products. Mr. Tobin was at various times previous to his connection with the Allied Purchasing Corp. merchandise manager of Bonwit Teller & Co., New York, Arnold Constable & Co., New York; Wm. Taylor Son & Co., Cleveland; Wm. H. Block & Co., Indianapolis.

Special Award to Frank Law

Frank F. Law, Jr., a trustee of Temple University and president of John Wyeth and Brother, Inc., Philadelphia, was the recipient of a special award at the commencement of Temple University May 18. Mr. Law, a graduate of the School of Pharmacy, class of 1917, and a former president of the university's general alumni association, was presented with the Distinguished Service Award.

van Ameringen Names Kapp in L. A.

Sidney Friend, secretary of van Ameringen-Haebler, Inc., has announced that the company's former representative on the west coast, Joseph B. Darr, is now in the army.

Benjamin Kapp has been engaged to represent the company in that territory. He will make his headquarters at the Los Angeles office of the L. H. Butcher Co. and at the other offices of the Butcher Co. in other cities. Stocks are carried by the L. H. Butcher Co. in San Francisco, Los Angeles, Seattle, Salt Lake City and Portland.

Mary Dunhill Appointments

A. L. Ogden, president of Mary Dunhill, Inc., has announced the appointment of Helen Martin, as assistant general manager and director of advertising for Mary Dunhill, Inc.

Flora Aguilera, who has rejoined the company after a brief absence, will assist Miss Martin in all her activities.

Wynne McGovern has been appointed director of publicity and assistant director of advertising. Miss McGovern has had wide experience in retail fashion coordination and promotion.

Col. Howard F. Currie, U. S. Medical Corps; Irving McKesson, president; Mrs. Anna C. Cahill, employee representative; and Lt. Comdr. V. W. H. Campbell, Medical Corps, U.S.N. at the ceremonies at which the Army-Navy "E" was awarded to New York Quinine and Chemical Works, Inc.

Companies

Sterling Buys Stearns

Frederick S. Stearns & Co., Detroit, has been acquired by Sterling Drug, Inc., New York. The Stearns Co. which was founded in 1855 maintains branches in New York, Kansas City, San Francisco, Windsor, Sydney, Australia, and Auckland, N. Z. The company also owns virtually all of the stock of Nyal Co., Detroit, and sales for 1942 were reported at more than $6,000,000.

Parfums Charbert Moves

The offices, showroom and factory of Parfums Charbert, New York, have been moved to 730 Fifth Ave., where they occupy some 16,000 square feet.

Irresistible Buys Plant

Irresistible Cosmetic Co. has purchased the large two-story and basement plant, formerly occupied by the Gottfried Baking Co., at 1037-45 Prospect Ave., Bronx, N. Y. Irresistible will use the building for manufacturing purposes.

Guerlain Takes Health Insurance

Guerlain, Inc., New York, has enrolled its entire staff in the medical and surgical care plan of Group Health Cooperative. The entire premium for each employee is paid by Guerlain and payments for employees' dependents are made through payroll deduction.

Lynette Takes Health Insurance

Chemical Center Corp., New York, manufacturer of Lynette perfumes, has enrolled its entire staff in Group Health Cooperative, Inc. This entitles all those covered to surgical and maternity care in the hospital, the doctor's office or at home, and medical care in cases requiring hospitalization.

Wittenberg Leaves U. S. I.

U. S. Industrial Chemicals, Inc., has announced the resignation of A. J. Wittenberg, vice-president of the company and director of the Stroock & Wittenberg division. Mr. Wittenberg has been associated with the company since 1938 when the Stroock & Wittenberg Corp. became a wholly owned subsidiary of U. S. I. Some time ago the natural and synthetic resin business of Stroock & Wittenberg with the same personnel and officers was made an integral part of U. S. I. and is being conducted in the name of U. S. Industrial Chemicals, Inc.

LANOLINE

Anhydrous U. S. P. Hydrous

specify ROWAG *quality*

For better creams and ointments

BEESWAX
White U.S.P. Yellow

ALCOLAN
Absorption Base

ROBINSON WAGNER CO.
MANUFACTURERS AND REFINERS
110 East 42nd Street New York 17, N. Y.

BRIDGEPORT...

For the past two years our facilities have been devoted almost exclusively to the production of war materials. We have been fortunate, in that we have been able to handle this work on the same equipment used for our regular peace time products, and, consequently, when material again becomes available for lipstick containers, vanity cases and other metal cosmetic items we will be prepared to start producing our regular line immediately. If you too are planning your post war program, we will be glad to assist you.

THE *BRIDGEPORT* METAL GOODS MFG. CO.

Established 1909

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VANITY CASES • ROUGE CASES • PASTE ROUGE CONTAINERS • LIPSTICK HOLDERS (ALL TYPES) • POWDER BOX COVERS • EYEBROW PENCIL HOLDERS • BOTTLE CAPS • JAR CAPS • METAL NOVELTIES TO ORDER

Amie Products Expands

Increased business has made it necessary for Amie Products, Inc. to move to larger quarters. The company has taken two floors, containing almost ten thousand square feet at 131 Water St., New York.

Borden Buys Shark Fisheries

Acquisition of Shark Fisheries, Inc., and Shark Industries, Inc., of Hialeah, Fla., by the Borden Co. has been announced by C. F. Kieser, vice-president in charge of the company's special products division.

Lemke Changes Name

B. L. Lemke & Co. is now the name of the company, formerly known as B. L. Lemke Co. No change was made in the management of the business which became a partnership April 1, 1944.

Norda, Ltd. Buys Plant

Edward Stange, vice-president and manager, Norda Limited, Toronto, Canada, has announced the purchase of a three-story brick building on Main Street, East, in Vankleek Hill, Ont. The property was bought to take the place of the company's former factory which was completely destroyed by fire in March. H. D. McMillan has been appointed the new manager of the factory and will have charge of all work of reconstruction and renovation.

Hooker Appoints Chinnock

The Hooker Electrochemical Co. has announced that A. Vaughn Chinnock is now connected with its sales development department with headquarters in Niagara Falls, N. Y.

Continental Can to Mexico

Continental Can Co., Inc., is extending its interests to include Mexico, it has been announced by Carle C. Conway, chairman of the board and president of the company. A Mexican corporation is being formed which will build a modern can manufacturing plant in Mexico.

Yardley Buys in Union City

Yardley of London has bought a half-acre plot in Union City, N. J. adjoining its soap manufacturing plant. This gives the property access from Manhattan Avenue. It has a frontage of 328 feet on the Palisades with an average depth of 75 feet.

Owens Duration Appointments

Appointment of acting managers for two sales divisions of Owens-Illinois Glass Co., temporarily replacing two executives on leave for wartime assignments, has been announced by Smith L. Rairdon, vice-president and general sales manager, glass container division.

E. J. Walker has been appointed acting manager of the prescription ware sales division and W. M. Robertson acting manager of the pharmaceutical and proprietary sales division.

The mid-west office of Florasynth Laboratories, Inc. has been moved to a four-story building at 600 W. Monroe St., Chicago. This is the third move to larger space since the Chicago branch was established in March 1934.

Pharmacognosy Book

Dr. George M. Hocking, chief pharmacognosist, S. B. Penick & Co., has prepared a booklet consisting of two check lists of periodicals with explanatory text. One list covers the field of pharmacognosy and the other that of pharmacology. Copies of the compilation are available upon request from S. B. Penick & Co.

Norwich Retirement Plan

A plan has been approved by the directors of Norwich Pharmacal Co., which provides life income upon retirement to Norwich employees. Although the plan is in the installation stage, approximately ninety per cent of the eligible employees are participating. For many years the company has had a plan of group insurance to provide coverage for life, accident and health insurance and dependent hospital benefits.

Associations

Proprietary Assn. Meets

The Proprietary Association of America held its 62nd annual convention at the Biltmore Hotel, New York, May 15-17. Fred Stock, chief of the Drugs and Cosmetics Section, WPB chemicals branch, and Robert P. Fischelis, chief of the medical and health supplies branch of the Office of Civilian Requirements were two of the speakers.

Post-war medicines and research developments in the drug field were among the subjects discussed at the Scientific Section meeting, May 15. The program was arranged by Dr. Joseph D. McIntyre, of Dr. D. Jayne & Son, Inc., and included the following papers: "The Curve of Human Repair and Maintenance," by Dr. O. S. Gibbs, director of medical research, Plough, Inc.; "Totaquine, U.S.P. XII—Its History, Composition and Uses, "by Dr. Thomas Lewis, Technical director, S. B. Penick & Co.; "Progress Report on Research Problems," by Dr. Lloyd W. Hazelton, George Washington University; "Technical Consideration of Manufacture of Post-war Medicinals," by Dr. Edward C. Merrill, assistant vice-president, United Drug Co.; "The Position of the Proprietary Association to Certain of the New Drugs," by Dr. John Paul Snyder, consultant on formulae, labels and advertising; "The First Bound Supplement to the U.S.P. XII—A Review," by Dr. Louis M. Roeg, Merck & Co., Inc.; and "Diuretics and Their

Value," by Dr. Victor A. Digilio, Dr. James C. Munch and Dr. Joseph D. McIntyre.

A round-table discussion following presentation of the papers was conducted by Dr. Frederick J. Cullen executive vice-president of the association.

Goldschmiedt President

The American Society of European Chemists and Pharmacists held its annual meeting March 28 and elected Dr. Henry Goldschmiedt, of the Oxzyn Co., president, and Dr. Benno Baecker, secretary.

DR. HENRY GOLDSCHMIEDT

Toilet Goods Meeting

The annual all-industry convention, sponsored by the Toilet Goods Association, Inc., was held at the Waldorf-Astoria Hotel, New York, May 18 and 19. Speakers on the first day included: Elmer B. Tysdal, assistant chief, Cosmetics and Toiletries, WPB; F. J. Solon, Containers Division, WPB; Col. R. B. Kuhn, Headquarters Army Service Forces, New York; W. L. Sims II, price executive, Chemicals & Drugs Price Branch, OPA; Herman L. Brooks, president of the association; Hugo Mock, general counsel for the association and H. D. Goulden, director of the association's board of standards.

Sessions on the second day of the convention were addressed by Francis Chilson, production engineer and production editor DRUG AND COSMETIC INDUSTRY; A. L. van Ameringen, van Ameringen-Haebler, Inc.; F. T. Dodge, Dodge & Olcott Co.; H. B. McCoy, chief of the Industrial Economy Division, U. S. Department of Commerce; and Earl Godwin, news commentator.

An evening meeting of the scientific section of the Toilet Goods Association was held Thursday evening, May 18. H. D. Goulden, temporary chairman of the section presided and the program included: "On the Interpretation of Pharmacological Data," by O. S. Gibbs, M. D., director, medical research division, Plough, Inc.; "Molecular Constitution and Bromo Acid Solubility," by Dr. H. Coutinho, director of research, George W. Luft Co., Inc.; "The Role of Dentifrices and Mouth Washes in the Prevention of Oral Disease," by L. S. Fosdick, M.D., Professor of Chemistry, The Dental School, Northwestern University; "Report on the Scientific Advisory Committee," by Dr. E. C. Merrill, assistant vice-president, United Drug Co.

DCAT Moves

The offices of the New York Board of Trade Inc., and all of its sections were moved May 1 to 291 Broadway, New York 7, where it occupies the entire fourth floor. The new telephone number is BArclay 7-9494.

Chicago D. & C. Assn. Spring Party

The Chicago Drug & Chemical Association's annual spring party is being held Saturday, May 20, at the Drake Hotel. The entertainment and banquet committee has arranged a program of entertainment and dancing.

BIMS Golf Dates

The general committee of the Bims met March 30 at the Hotel Lafayette, New York, and selected the following dates for the 1944 Bims golf tournaments: June 27, Crestmont Golf Club, West Orange, N. J.; July 25, Siwanoy Country Club, Bronxville, N. Y.; August 24, Wheatley Hills Country Club, Long Island.

BIMS of Boston Golf Dates

Pete Niles, chairman of the executive committee of BIMS of Boston, has announced the following golf tournament dates for the organization: June 22, Woodland Golf Club; July 27, Commonwealth Country Club; September 21, Charles River Country Club.

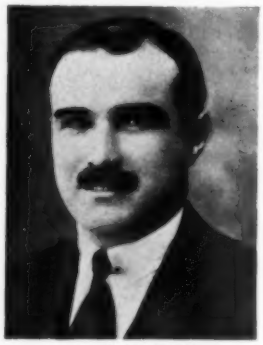
St. Louis Drug Meeting

The regular monthly meeting of the St. Louis Drug, Chemical and Allied Trade Association held April 6 at the De Soto Hotel was addressed by Lt. Floyd Cox of the U. S. Marine Corps who was on furlough from his Corsair Squadron. He modestly described the incident for which he is acclaimed as being the only pilot to have sunk a Japanese transport by machine gun fire. His commanding officer who was present announced that his commission as captain had come through.

A. Blanque

A. Blanque, president of Bruno Court, Grasse, France, died December 14 after a long illness. He was fifty-three years old.

He had served as a captain in the French Air Corps and had been decorated several times. Before the war, he visited this country frequently. Bruno Court is represented here by Naugatuck Aromatics, New York.



A. BLANQUE

Henry Drury

Henry Drury, secretary of A. C. Drury & Co., Inc., died March 13, at the age of seventy-nine.

He was the father of A. C. Drury, president of the company, and had been associated in business with him from 1921 until the forming of the corporation in 1928 at which time he was made secretary.

George J. Wallau

George J. Wallau, founder of the company bearing his name, died at his home in Brightwaters, N. Y., April 14. He was seventy-two years old.

Mr. Wallau was born in Manhattan in 1871 and entered the importing and exporting drug field under the name of George J. Wallau, Inc., in 1894 and lacked but a few months of joining in the celebration of the fiftieth anniversary of the business he founded. For the past five years he had not been active in the business, spending most of his time at his home in Brightwaters.

Thomas G. Ward

Thomas G. Ward, representative for Dodge & Olcott Co., died suddenly at his home in Westfield, N. J., April 21. He was in his sixty-fourth year.

Mr. Ward had spent his entire business career with Dodge & Olcott whom he joined in 1898. He started as a salesman during the first world war and was very active until a few days before his death.

Industry's Books

Your Hair, Its Health, Beauty and Growth, by Herman Goodman, B.S., M.D., 287 pp., Halycon House, New York, $1.98.

This book presents the latest information on the care of the hair—for both men and women. All important hair problems are considered. The best methods for keeping the hair clean, healthy, and attractive are discussed, and also what can or cannot be done about superfluous hair, baldness, and saving hair. Following are some of the subjects discussed in this work: How Hair Grows. Is Baldness Curable? Superfluous Hair and Methods of Removal. Dandruff and Other Common Diseases of the Scalp and Hair. Hair Color and What Can Be Done About It. The Permanent Wave and Other Forms of Waving. The Hygiene of Shaving. The Shampoo. The Truth About Tonics, Dressings, Etc. Interesting Facts About Hair. As this book deals with anatomical structures, physiological and pathological processes, common scalp and hair diseases, technical terms and phrases have been given for the reader's convenience.

Civilization And Disease, by Henry E. Sigerst, M.D., 255 pp., Illus., Cornell University Press, Ithaca, $3.75.

This book is based upon six lectures which the author delivered at Cornell University in the academic year 1940-41, namely, the Messenger Lectures On The Evolution Of Civilization. That series was founded and its title was prescribed by the late Hiram J. Messenger, B. Litt., Ph.D., of Hartford, Connecticut, who directed in his will that a portion of his estate be given to Cornell University and used to provide annually "a course or courses of lectures on the evolution of civilization, for the special purpose of raising the moral standard of our political, business, and social life." The lectures deal with the evolution of civilization and the part that disease played in that evolution. The work is divided as follows: Civilization As A Factor In The Genesis Of Disease; Disease And Economics; Disease And Social Life; Disease And The Law; Disease And History; Disease And Religion; Disease And Philosophy; Disease And Science; Disease And Literature; Disease And Art; Disease And Music; Civilization Against Disease.

Pathology And Therapy Of Rheumatic Fever, by Leopold Lichtwitz, M.D., Lately, Chief of the Medical Division of the Montefiore Hospital, and Clinical Professor of Medicine, Columbia University, 211 pp., Illus., Grune & Stratton, New York, $4.75.

Dr. Lichtwitz's first concern has been to define the concept of true rheumatic arthritis, and to establish the fact that rheumatic arthritis and rheumatic disease of the heart and blood vessels are identical in origin, mechanism, pathology, and course. The study carries through an inclusive classification and analysis of the various types of rheumatic and arthritic affection. The pathology by which these shape the ground for fateful functional and structural major involvements is set forth both in the whole perspective and with detailed clinical precision. There is exhaustive description of the anatomic changes and all that latest histologic penetration offers. The discussion traces the cause and effect picture in catarrhal attacks that are in themselves rheumatic or may reactivate the rheumatic process. The chapter on therapy surveys the gains and risks, the deficiencies and the proved usefulness of all known forms of cure and relief of rheumatic disease, from ancient to ultramodern chemical and physical instrumentalities. The accent of the work is on safeguards, early care, and prevention.

Price Making In A Democracy, by Edwin G. Nourse, 541 pp., The Brookings Institution, Washington, $3.50.

The author of this book frankly admits a bias in favor of free enterprise. But he argues that it means economic freedom for everybody and must be truly enterprising, not merely protective. He turns his back on the idea that natural economic forces, if merely left alone, will automatically work out the correct answer to business problems. He likewise is not ready to admit that we have to turn the running of the whole system over to government agencies. This book re-examines the fundamental principles of free enterprise, constructive competition, and long-range profit motivation for all citizens of the business world. It seeks to show that private administration of business in conformity with these principles would reduce the demand for government intervention to a minimum and raise our national production and general well-being to a maximum. The discussion is focused primarily on the practical issues of the re-conversion period.

Sexual Anomalies And Perversions, by Magnus Hirschfeld, M.D., 630 pp., Emerson Books, Inc., New York, $4.95.

Sexual Anomalies was planned by Dr. Hirschfeld as a textbook for those whose professional duties render a knowledge of sexual pathology necessary, as, physicians, criminologists, attorneys and judges, probation officers, educators, etc. Book I deals with the normal development of sexuality, physically and psychologically, from the embryonic phase to the phase of sexual death. Book II describes the quantitative irregularities of sexual development, i.e., the anomalies arising from the under-or over-development of the physical and/or psychological sexual impulse. Book III is devoted to anomalies due to a deflection of the sexual impulse, i.e., a deviation from the normal direction. Books IV and V deal with sexual anomalies caused by the independent development of component impulses, which normally merge with and become subservient to the sexual impulse.

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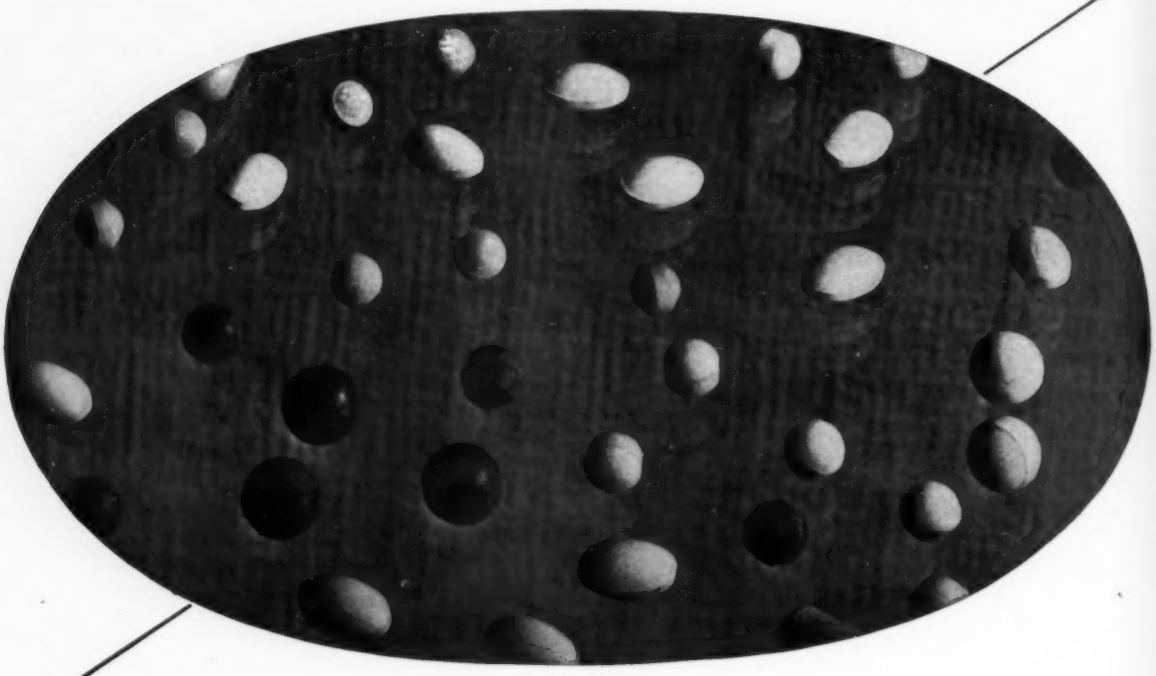

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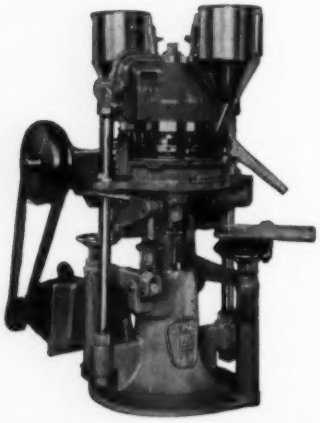

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Production Forum

By Francis Chilson

Production Engineer

Material Handling

It is my intention to keep harping about material handling methods and costs until you become continually and even painfully conscious of the fact that the cost of handling materials constitutes the major part of your operating costs—materials excepted, of course. At a time when it seems that I have said the last word on the subject, I find some bird with a post-war building plan which is architecturally imposing but completely devoid of any conception of the influence that structures play in keeping the cost of handling materials at a minimum. Production men will cuss and swear at difficulties in handling materials in their old buildings, but the very moment a new building is projected, they cease to be production men and become artists.

So again, at the risk of boring you, I'm going to repeat what experience in reorganizing and modernizing more than 50 companies has taught me. There are two types of structure which are ideal for the manufacture of cosmetics and pharmaceuticals. The one-story structure comes first and the two-story structure comes second. If your offices and laboratories are to be consolidated with the plant, there appears to be no objection to one or more additional stories to house these facilities, together with other service departments, which in any case ought never to be put into a situation where they can interfere with, or restrict the expansion of manufacturing, warehousing and packaging functions.

It is simple logic that the storage of packaging materials; the performance of all packaging operations; the storage of finished stock and the performance of all shipping functions, should all be carried out on one continuous and contiguous level. If the products manufactured are heavy and bulky, as face powder, chemicals, cereals, flour, etc., the manufacturing operations also should be located on the first floor. If the products manufactured consist largely of water, it is perfectly all right to locate the manufacturing departments and the raw material storage area on a second floor. This is particularly true if there is a grade on the site so that you can provide your building with a road giving direct access to the second floor. If a siding is involved, a belt or apron type conveyor can with some limitations on efficiency be utilized for the transport of incoming raw materials to the second floor, thus eliminating elevators altogether. The primary axiom of economical material handling is that material movement must be continuous and rehandling must be kept at a minimum. You can never get continuous movement in a structure depending solely upon elevators. But you can always get continuous material movement in a one-story structure and, if you install a ramp, you also can get it in a two-story structure.

The argument is often advanced that where ground costs are high there is some justification for building a multi-story structure. Again I say with the experience of 25 years in more than 50 different plants, *a multiple-story structure is never economical, regardless of ground cost.* The argument is often advanced that because of increased ground area; increased exterior wall area and increased roof area, a large single story structure is more expensive to build than it is to build a multiple story unit. Simple arithmetic will prove that that is bunk. In the first place, the factory should be considered as a composite machine and it should be designed to facilitate the performance of all operations carried on within it. Even if a single story structure actually were more expensive to build, an increase of 10% or even 25% in the cost of the original structure would be as nothing compared with pegging material handling costs at a permanently higher level for the fifty year life of the building—which is always the result of building a multi-story structure. If you are not building to reduce operating cost, then don't build.

Let's consider some figures: Assuming the land on which you propose to build is as much as $2,000 an acre. Let us assume that you need a total of 3 acres of floor space. Do you think you can build 3 acres of reinforced concrete one above the other, together with the necessarily heavier foundations and columns that a multi-story structure requires, as cheaply as you can run that three acres of concrete out on the ground? Try and do it. Ground will carry, depending on its density, anywhere from 4,000 to 10,000 pounds per square foot. The cost of upper floors will depend on the weight they ought to carry. A modern industrial building ought not to be built with a carrying load of less than 200 pounds per square foot and for many manufacturing

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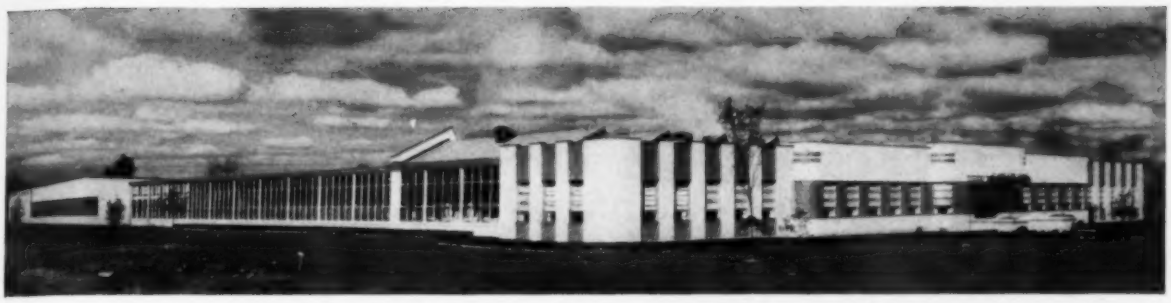

Harold H. Clapp, Inc., plant at Rochester, N. Y., is an outstanding single-story structure.

operations it should run as high as 400 pounds per square foot. A 200-lb. reinforced concrete floor will run about $3.00 per square foot. A 200-lb. floor laid on compacted earth will not cost much more than a tenth of that. I've seen a 4-inch concrete slab without reinforcing laid directly upon the earth, supporting a load of 1500 pounds per square foot with no evidence of distortion or cracking. A 4-inch concrete slab up in the air wouldn't even hold its own weight without reinforcing. The answer is obvious.

There are other inherent drawbacks in a multi-story structure other than an increase in first cost. Depending on its height and the load it is to carry, you will lose from 10 to 20% of the gross enclosed floor space for columns, stairways and elevators. You will lose complete and continuous overall supervision, or you will be forced to add to your supervisory staff to control each of the several floors. One man can control a force of 500 workers on one floor, but it will take four to do the job if the workers are separated on 4 floors. Along with the natural impediments that a multi-story structure interposes to the flow of materials, the expansion of each floor is limited by the sidewalls. You can't shove an upper story out into the air with nothing below to support it. You can add to a single story structure as much as you wish in several directions.

Coming back now to the actual handling of material, let me show how a single story structure facilitates material movement and storage. First of all, you can utilize a pallet system with a fork truck. Pallets can be loaded at a truck dock, or in the railroad car, if a siding is provided, and one operator can pick up the loaded pallet, elevate it as he travels and he can stack these pallets three or four high depending upon available headroom. Pallets can be removed from the stack with equal ease by one man and taken to processing or packaging centers, and finished stock can be handled, stored, and shipped with the same facility. If you have a two-story building with a ramp to the second floor, the fork truck and the pallet system can be used with almost equal efficiency. If an elevator is provided to furnish access to the second floor, movement of the materials will stop at the elevator. Besides if a fork truck and pallet system are used the elevator will have to be very large and possess a heavy load carrying capacity. Therefore, it will also be slow.

In my judgment, the fork truck and pallet system can not be surpassed for speed, flexibility and economy. It is interesting to note that in a book recently published by an authority on materials handling, my view of the efficiency of this method of transporting materials is completely supported. In this book every type of material handling equipment is dealt with from hand trucks to huge cranes, and each type is dealt with in perfect fairness, but to save his life, the author can not avoid making comparisons in discussing each type of equipment with the pallet handling system. The chap who invented the pallet method should be given a medal.

Skids also are employed for unit loads, but are limited by the fact that they can not be stacked one upon the other, without racks. Racks waste floor space, because you have to provide reasonably wide aisles to get to them. It might be mentioned in connection with pallets that different kinds of materials which move

Northam Warren's plant at Stamford, Conn., is among the better two-story jobs.

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CONTROL OF AIR FOR MODERN INDUSTRY

very slowly, can be piled solidly together in huge stacks without aisles at all, excepting the main approaches. A fork truck can repile material so rapidly, that it sometimes is more economical to pile slow or surplus materials in condensed stacks and rehandle it at intervals, than it is to provide access aisle space to each kind of material.

Conveyors of various types are ideal for *continuous* movement. That is why they have been employed so extensively in the automobile industry. Conveyors must follow a fixed path. Hence, they are to that degree, inflexible. Conveyors must be designed to suit the type of product in size, shape and character, because it is not possible to devise one conveyor system that will handle every kind of material such as bags, barrels, bales, drums, kegs, and various sizes of cases and bundles. To that extent they are inflexible. Men are required at the unloading point to stack materials from the conveyors—*one package or unit at a time*. If the materials are heavy, two or more men will be required at that point. If the stacks are high, several men will be required to build the stacks. Similarly, as the stacks are used up several men will be required to remove the material on the upper tiers until the stacks reach a height where one man can conveniently remove the packages. To that extent, conveyors are inflexible and expensive. Finally, conveyors are expensive to install. In order to work with reasonable efficiency and to permit men to stack away and remove materials with some degree of ease, long lines of conveyor must be used and the storage area should be conveyorized so that the handlers do not have to walk more than 10 feet in any direction from the adjacent conveyors. If short runs of conveyor are used to carry materials into a warehouse, or from one floor to another and if materials are piled on trucks or pallets at the end of the conveyor, for storage or transport purposes, it is obviously much more economical to load the trucks or pallets at the point of origin.

However, conveyors are a necessity in multi-story structures, because they provide the continuous flow of material which is impossible to achieve with elevators. They are a necessity when buildings are scattered around the plant site and it is necessary to transport materials from one building to another. They are desirable also in cases where storage points are located several hundred feet from the railroad siding or truck docks. In particular instances, it may be desirable to use conveyors to service packaging lines, especially when the containers in which the packaging materials are received are thrown away. Dumping bottles on a service conveyor in a warehouse area, keeps the junk out of the packaging department.

The comparison in cost between a conveyor system and a pallet handling system can be obtained from two first hand experiences. In one, multi-story structures made it necessary to install an elaborate conveyor system. It represented a capital investment of $75,000. It was a wise, economical investment, because it made possible the handling of materials much more rapidly and hence less expensively than had been the case when trucks, skids and pallets (and elevators) were used. In another instance, we had an opportunity to design a building to facilitate the handling of materials, and in this case, the cost of handling equipment, namely two fork trucks, a charger and a great many pallets amounted to $15,000. The second plant dealt with approximately the same number of items as the former but in substantially larger quantities. In the second case, handling costs are but a fraction of those in the former plant.

Also, we had an opportunity to design a building for a firm which operated another plant making identical products and using identical equipment. But the old plant was a 6-story structure and the new plant was a one-story structure, very elaborately decorated and landscaped. Yet, in the new plant, the unit cost per package on identical items is on the average 15% lower than in the old. Figure it out for yourself.

It is significant that when materials are too heavy or too bulky to be lugged up stairs in elevators, factories always are limited to one story, *regardless of ground cost*. Detroit and Los Angeles are among the most expensive real estate areas in the country but the automobile and plane plants are all built on the ground.

Of course if your building project is intended to satisfy the ego of Mr. Big, or if you are building a monument to your Aunt Tillie, then operating costs and waste won't mean anything to you and you can toss this article into the can. On the other hand if waste (which is another name for unnecessarily increased operating cost) means nothing to you and you merely need extra space then don't build at all;–Buy one of the buildings that the government will have on its hands after the war. These buildings will give you cheap space and since many of them conform to the one story ideal you may be lucky enough to find one which will give you space and efficiency as well.

Lighting

A good many important executives in the trade become tremendously exercised in walking through their plants when they discover a few unnecessary lights burning. On many an occasion, I've been present when Mr. Big raised hell with the plant manager because when walking through the plant he had noticed a number of lights burning unnecessarily. On one occasion, a really big man declaimed with considerable heat because in his tour of the plant he had discovered 65 lights burning unnecessarily. He turned them all out himself. If the time he took to turn these lights out was calculated at his rate of pay, the cost of turning the lights out would have kept the plant brilliantly illuminated for a considerable period of time. I'm no light saver. Good lighting is one of the least important overhead expenses. Plants and warehouses should not be merely lighted, but should be extremely well lighted at all times. Eye strain, as tests have shown, is the first cause of inefficiency and mistakes. Eye strain is the first cause of nervous fatigue. Eye strain is the first cause of nervous irritability. I've seen men go into dimly lighted

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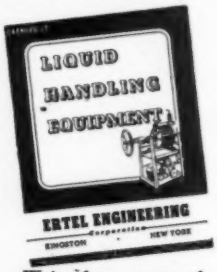

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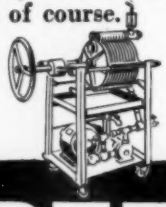

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EPPENBACH HOMO-MIXER MAKES DISPERSIONS WITHOUT INCORPORATING AIR

1. Turbine head near bottom of tank starts a converging horizontal flow which carries sedimentary material into close-fitting rotor vanes.
2. Inflowing "slurry" is violently agitated at high velocity and projected upward toward surface.
3. A submerged baffle-plate deflects the rising current horizontally toward sides of tank, thence flowing downward toward bottom.
4. Rapid down-flow submerges and wets out floating material, including additives being fed into the mix.
5. The entire batch is deflocculated resulting in a perfect dispersion.
6. No surface boil . . . no vortex . . . NO AIR DRAWN IN.

The Eppenbach HOMO-MIXER is built on an entirely new principle. Whereas ordinary mixers create a vortex in the material that pulls in air, the HOMO-MIXER draws only from the bottom of the tank. Entrapped air tends to cause separation and splitting, and frequently oxidizes the product.

Furthermore, the HOMO-MIXER does not require a high head of liquid to give efficient mixing action. It is possible to process material in a tank at a depth just great enough to cover the mixing head. Fits tanks of all types and shapes . . . no clamps required . . . no special angle of installation.

Write for complete details of this mixer—"the only one of its kind." Ask for Catalog No. 402.

Eppenbach HOMO-MIXERS are available in a complete range of sizes for laboratories and production plants. Capacities range from 2 to 2,000 gallon batches from ¼ to 25 H. P.

EPPENBACH, Inc., 44-12 11th Street
Long Island City 1, N. Y.

EPPENBACH INC.
Processing Equipment for Over 30 Years

warehouses and stock rooms to take materials from the shelves, who were forced to carry the boxes to adjacent windows to read the labels. Wasted time costs more than lights. It doesn't seem sensible to have lighting as poor as that anywhere, but that is what you very often find. Retiring rooms are often filthy because of poor lighting. If I had my way, all plant areas would be flooded with light. There'd be no dark corners into which men can spit, nor any dark cubby holes in which they can kill time. Let's have light, floods of it.

Fork Trucks

Elsewhere the virtues of the motor operated fork truck were discussed. In addition to handling materials they have a general plant utility, not often recognized. In handling machinery from cars, the tiering mechanism can be used as a crane. In the winter you can remove the forks and attach a plow to clear plant roadways and walks. By attaching a suitably designed bucket, you can use a fork truck for light excavation work and in grading and you can use it also for loading trucks with dirt, ashes, spent drug marc, etc. By attaching a coupling to the rear of the truck, you can use it to haul a train of wheel trucks between one building and another. Given a fork truck and a little imagination and you will find so many plant uses that even a small plant can afford to own one. Right now, of course, they are almost impossible to get even with the best of priorities, because the Quartermaster Corps early recognized the utility of these trucks and commandeered virtually the entire output.

Wax Dipping

Aeroil Burner Co., West New York, New Jersey, are offering two electrically heated portable wax dipping tanks. If any of you are turning out government merchandise which requires wax dipping, you might have a look at these new units.

Glass Tanks

At long last, actual glass tanks are on the market and you can get them without priority or limitation from Pittsburgh Plate Glass Company, Grant Bldg., Pittsburgh, 19, Pa. These glass tanks are made in various sizes, but I don't know how large they are. With glass tanks and glass piping, you certainly could make not only a corrosion free layout, but also a slick looking layout.

Car Puller

Those of you who have sidings will be interested in a double sheave car puller made by Steven Adamson Co., Aurora, Illinois. This gadget is not expensive and when installed on your freight platform enables you to pull cars in either direction.

Mixer

Rather a good looking dry mixer has been developed by the Multiplex Concrete Machine Co., Elmore, Ohio. It is claimed that these mixers will turn out more uniform batches in less time than the conventional spiral types.

Hole Driller

As you all know it's a tough job to drill a hole through a reinforced concrete floor or through any floor, in fact. Likewise, it is a tough job to drill holes for the insertion of expansion bolts in anchoring machinery. These chores can be simplified through the use of an abrasive drill. This handy little gadget is inexpensive enough for every plant to own one. Standard drill sizes available up to 4 inches in diameter and capable of cutting a core 18 inches long. By the use of the special abrasive drill, a core actually is cut out of the floor. The edges of the hole are clean and sharp and the drills will go through slate, porcelain, tile terazzo or stone.

Flooring Materials

As mentioned briefly last month H. H. Robertson Company, Farmers Bank Building, Pittsburgh, Pa. manufacture a flooring material of exceptional merit called Hubbellite. This material is bacterio-static and hence is used in biological laboratories and in hospitals; it also is non-sparking and for this reason finds wide employment in explosives plants. It is available in red, green, gray or brown. It will adhere to concrete, wood or steel. It is claimed that it will not break, crack or dust, and that it will not absorb grease and oil. It strikes me that this material is just what the doctor ordered for resurfacing old floors especially in pharmaceutical plants.

Sublimation

You are all familiar with the processes used for dehydrating or subliming serums, blood plasma, penicillin, etc. It will interest you to know therefore, that F. J. Stokes is planning to apply the process commercially to the dehydration of foods. Already they have dehydrated beef, pork and lamb, orange and tomato juice and other vegetables. Stokes claims that the process can be carried out at extremely nominal cost per hundred pounds of moisture evaporated. Who knows but that after the war we will be subliming tablet granulation instead of drying it. Stokes is certainly broadening its activities. I noticed in a recent publication introduction of an apparatus for coating metallic and non-metallic material with finely sub-divided metals under high vacuum.

Spray Towers

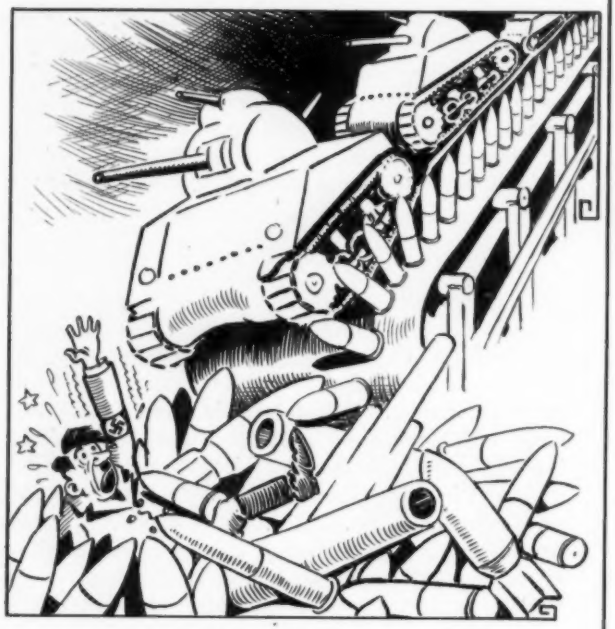
Years ago at Bristol Myers, I noticed in a pond on a roof a bunch of gold fish swimming around. At first I thought that the fish were merely a hobby, but they have a very practical value in keeping down algae growths in ponds that are used to supply cooling towers for air conditioning purposes. Sometimes copper sulfate will help, but the fish are more interesting.

X-Ray Equipment

North American Philips Co., 100 East 42nd St., New York, 17, N. Y. is rapidly expanding its line of industrial X-ray devices. With these devices you can examine the interior of sealed packages and in general, use them for inspection work.

A War Vocabulary

PRODUCTION



Production has only one limitation and that is our mental capacity to desire, plan and demonstrate.

Old methods and standards are constantly giving away to progressive, constructive thinking. Thinking not idle thoughts, but thinking followed up by demonstration.

Modern production has taught us that progressive steps should be handled in co-ordinated lines. This is modern progress. In the bottling and packaging of liquids and semi-liquids, we have been engineering these ideas over a long period of years.

When the need for full line production on war material ceases, we will be found ready to serve our customers with a greater efficiency gained through such co-operation as we have rendered in producing war needs.

U. S. BOTTLERS
Machinery Co.
4011 N. ROCKWELL ST., CHICAGO

MANUFACTURERS OF
PUMPS
CAPPERS
FILTERS
CONVEYORS
WASHERS & DRYERS
WASHERS
CORKERS
FILLERS

IT WON'T HURT THE WAR TO THINK ABOUT PEACE!

It won't hurt the war for American business to lay plans to insure a peace that will mean the beginning of a greater era for Americans. Such a peace will be predicated on an industrial system which will increase the productivity of every worker to make more things available to more people. That means highly efficient, newer, better methods and machines.

In the field of packaging machinery Triangle offers today many machines heretofore unparalleled in performance. After the war other new developments *will be available* to further improve packaging efficiency. Triangle is ready to help you now to think about peace —and packaging machines. Many customers have already ordered Triangle equipment for post-war delivery. Your inquiries are invited.

In addition to building essential package machinery, Triangle is producing quantities of parts and assemblies for war equipment. This work comes first and for it Triangle long since received, unsolicited, the Army-Navy "E".

Ask About the ELEC-TRI-PAK

The last word in modern packaging machinery, automatic and semi-automatic Elec-Tri-Pak Vibratory Feed Weighers are available today, on priority, for packaging crackers, cookies, candies, beans, peas, rice, tapioca, metal specialties, rivets, nuts, bolts, grocery staples, potato chips, marshmallows, coffee, prunes, bread crumbs, chemicals, powders and a host of other items. They feature: fraction-of-an-ounce accuracy; speed; self-cleaning; delicate handling of product; quick change-over from one product to another; versatility. NEW 20 PAGE BULLETIN describes many Elec-Tri-Pak installations. Write for a copy.

ARMY E NAVY

TRIANGLE PACKAGE MACHINERY CO.
929 NO. SPAULDING AVENUE, CHICAGO 51, ILL.

Sales offices in: Denver; New York; Cleveland; Birmingham; Los Angeles; Dallas; San Francisco; Framingham, Mass.
Automatic & Semi-Automatic Weighers, Fillers & Carton Sealers

Moisture Tester

Seedboro Equipment Company, 223 West Jackson Blvd., Chicago 6, Illinois are offering a machine for moisture testing which it is claimed will give you an accurate moisture reading by electronic means in less than a minute. It has been used in testing eggs, cocoa, butter, starch, and it should be equally useful in testing tablet granulations and effervescent salts.

Process Steam

Small cosmetic and pharmaceutical manufacturers who need limited amounts of process steam, will be interested in the electrically heated gadget made by Edwin L. Weigand, 7505 Thomas Boulevard, Pittsburgh, 8, Pa. These little gadgets can be made portable, if you so desire, so that process steam can be actually made at the point of use.

Emulsifying Agent

In a recent publication, I spotted a new type of self-emulsifying edible oil, which when mixed with water will form an emulsion of controllable viscosity. It is miscible with alcohol and glycerine. It possesses a high boiling point; is odorless and non-toxic. It has been used for shortening. It is made by the Beacon Co., Pickford St., Boston, Mass. The stuff probably has a trade name, but I don't know what it is.

Deodorant

An industrial deodorant made by the Anetite Mfg. Co., 1917 South Broadway, St. Louis, Missouri, has unusual properties. It does not have the odor of phenol, creosote or perfume. It will not stain or injure the skin. The product deodorizes by oxidation and is very inexpensive to use.

Payloader

This is the name of a small industrial tractor equipped with a dump bucket mounted on a lifting or tiering frame. This apparatus can be used to dig or scrape; it can be used to load or unload cars or trucks and, from its construction, it could also be used as a fork truck by removing the bucket and supplying forks. This little job is not very expensive and what commends it especially is that it has a turning radius of less than 10 feet.

Case Unloader

Island Equipment & Supply Co. Inc., 101 Park Ave., New York, N. Y. recently introduced a new type of combination bottle and jar unloader and unscrambling machine. I haven't seen this gadget as yet, in operation, but as I understand it, it opens the flaps of incoming cases and dumps the bottles right side up on an unscrambling table which feeds the bottles or jars in a single line with the cleaning or filling equipment. Sounds too good to be true. It is not evident from the information I have at hand as to what becomes of the case linings and packing material. If you have to have a girl at the line to sort this stuff out, you might just as well dump the cases by hand.

Water Treatment

As mentioned previously water treatment by de-ionization has been applied in a big way by Illinois Water Treatment Co., Rochford, Illinois. De-ionized water is very rapidly replacing distilled water throughout the pharmaceutical and cosmetic industry. The water is almost as pure as distilled and a lot cheaper to produce. Average water can be treated at a cost of less than $1.00 for 10,000 gallons.

Portable Fire Extinguisher

Kidde Model 100 wheeled fire-extinguishers, now manufactured with a non-conducting plastic nozzle shield, combine the quick mobility of portable units with the great fire-fighting power of 100 pounds of highly compressed carbon dioxide. Designed to protect larger hazards than hand portable extinguishers could handle, these wheeled units provide fast action, heavy duty extinguishing. The shielded nozzle is equipped with a long handle-grip and a shut-off valve which permits conservation of the gas during changes of fire-fighting position. Like all Kidde extinguishers, the Model 100 is Underwriters' Laboratory approved, bearing their B and C rating as suitable for all flammable liquid and electrical fires. These large Wheeled-type extinguishers protect special oil and electrical hazards in power plants, as well as oil pumping stations, garages and large storage spaces. Walter Kidde & Company, Inc., Belleville, N. J.

Big Penicillin Tanks

The manufacture of giant penicillin tanks makes it possible to produce the new and powerful bacteria-killing drug in large quantities.

The war created an urgent demand for this drug, the most powerful antidote to gangrene—the dreaded scourge of the battlefield. Yet, as late as last summer, it was thought by our leading scientific magazines that penicillin could never get mass-produced. Containers no larger than milk bottles were being used to grow the mold from which the drug was made. The problem of manufacturing large batches of it seemed too difficult to overcome, and the actual growing of the mold a too long and involved process.

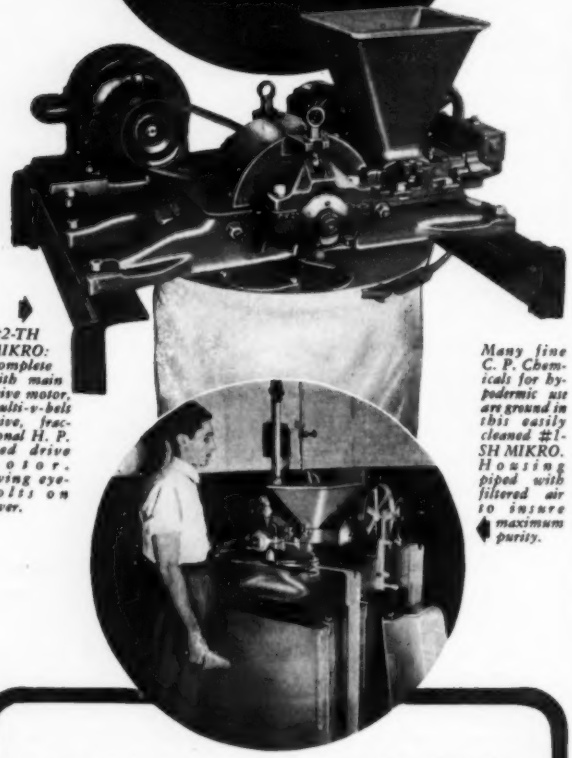
Recently an announcement was made that this drug was being manufactured in quantity and that by June enough penicillin would be available for military and perhaps also for civilian needs.

Almost overnight the penicillin "milk bottle" era had vanished! Now giant steel tanks do the job. These cylindrical tanks are partly filled with a culture on which mold forms when kept at an even high temperature by means of steam pipe lining the container. The mold excretes a clear liquid, which is drawn off. A carbonaceous substance is added that extracts the penicillin and produces the "yellow magic," a yellowish powder. The mold requires about eight days to form.

The first of the 2,500-gallon steel tanks made by John Nooter Boiler Works Co., St. Louis, Missouri is said to be the first big penicillin tank ever built.

One Step

FROM FEED TO PROCESSED PRODUCT



#2-TH MIKRO: Complete with main drive motor, multi-v-belt drive, fractional H. P. feed drive motor. Swing eye-bolts on cover.

Many fine C. P. Chemicals for hypodermic use are ground in this easily cleaned #1-SH MIKRO. Housing piped with filtered air to insure maximum purity.

Do you require a uniform granular grind on roots, herbs, barks, or any material for percolation or solvent extraction? Or a dependable superfine grind for vitamins, dried animal glands, dextrose, sulfa drugs, and almost any of the pharmaceutical chemicals?

Does your product demand an exceptional blend or dispersion—*dry or wet*—for uniform distribution of a small amount of any given material into a large mass of a carrying base?

Regardless of material or specified grind, it's *one step* from feed to processed product with the dustless MIKRO-PULVERIZER!

THE MIKRO-PULVERIZER
blends and pulverizes in one operation!

- **Eliminates screening**
- **Keeps air dust-free**
- **Reduces cleaning time up to 90%**
- **Saves power from 25 to 75%**
- **Requires a minimum of attention of unskilled help — mesh controlled mechanically**
- **Needs little floor space — no steel or concrete foundations**

Free *Informative new 32-page catalogue showing the complete MIKRO-PULVERIZER line sent on request.*
Confidential FREE test grind on submitted samples.

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Automatic filling and sealing

Use packets for rationing

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West coast representatives:
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for powders, granules, crystals

A NEW COLTON ROTARY TABLET PRESS
SERIES 200-25 ROTARY TABLET PRESS

The design of the Series 200-25 Tablet Machine is an outstanding engineering achievement, the culmination of years of experience in building tablet machines. This compact machine incorporates refinements that provide an entirely new standard of performance for this type of equipment.

ARTHUR COLTON COMPANY
2620 East Jefferson Established 1884 Detroit, 7, Mich.

"AUGER-VAC"

THE VACUUM-AUGER FILLING FOR POWDERED PRODUCTS

INSURES A CLEAN DUSTLESS FILL AND A TIGHT PACK

One of the later developments of Stokes and Smith Co. is the combination vacuum-auger method of filling such powders as cocoa, powdered milk, flour, dehydrated foods, etc., that require some packing to fill a container.

This new method combines the advantages of the auger feed for speed and accuracy and of the vacuum method for filling without dust.

The containers may be tin cans, glass jars or fibre but they must be air tight to hold a vacuum.

A motor driven vacuum pump creates the necessary vacuum. Correct timing to the vacuum-auger head is provided by a valve control mechanism.

The "Auger-Vac" Method may be used on the S & S Single Unit Filling Machines or the Duplex Automatic Machines. Speeds – 15 to 100 per minute.

"AUGER-VAC" EQUIPMENT for "S & S" UNIVERSAL FILLING MACHINES. Fully covered by U. S. PAT. No. 2,330,862.

STOKES & SMITH Co

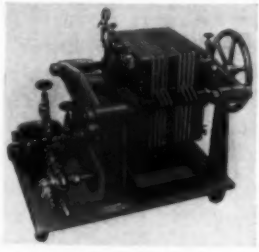
FRANKFORD, PHILADELPHIA 24, U. S. A.

FILLING • PACKAGING • WRAPPING MACHINES

SEND US SAMPLES OF YOUR CONTAINERS
WE WILL GIVE YOU COMPLETE INFORMATION

"BETTER MACHINES FOR BETTER PACKAGES"

FOR PENICILLIN



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2—Day Auger type Powder Fillers.
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..."HAGERTY HANDY FILLER"

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The most practical hand filler for creams, lotions and liquids.

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FOR *Ultra* FILTRATION
Specify
REPUBLIC FILTERS
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Filtering equipment and media especially designed for the drug and cosmetic industry to attain the desired degree of porosity, sterility and flow rates.
Our laboratory and technicians are at your service.
Catalogue on Request
REPUBLIC FILTERS, Inc.
PATERSON, N. J.
480 Lex. Ave., N. Y. — 1142 Howard St., San Francisco, Cal.

STOP TANK TROUBLES
with GLASS tanks
• • • that are non-staining.
• • • that provide maximum sanitation.
• • • that are impervious to acids, alkalis, chemicals, liquids of almost every kind.
• • • that are readily available, right now.
• • • that are made of specially-tempered glass to assure long service and resistance to sharp temperature changes.
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Send the coupon for the facts about GLASS TANKS BY "PITTSBURGH"...TODAY!
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Please send me, without obligation, free literature on Glass Tanks by "Pittsburgh."
Name.....
Address.....
City..... State.....
PITTSBURGH PLATE GLASS COMPANY

Absorption Base Creams

(*Continued from page 530*)

of magnesium sulfate contributes to make the cream firm.

No difficulty will be encountered in manufacturing. The principal problem with water-in-oil emulsion creams is stability, which is harder to achieve for these emulsions than for cold cream. But it can be attained. A series of experiments with varied proportions of oil and water phases and different emulsifying agents should be prepared and also be subjected to different homogenizing procedures. Shelf-testing at normal, above normal, and below normal temperatures will then determine how the optimum of stability can be secured.

Warm temperature tends to promote separation. An increase in wax contents will counteract this, but makes the cream stiffer. If a cream of soft consistency at normal temperature is desired it is to be recommended that the consumer keep the jar in the ice-box during the peak of the summer heat.

The principal merit of these water-in-oil emulsion creams, which has not been recognized as widely as deserved, lies in their close affinity to the skin and their ability to hold water rather than to repel it or to give it up. This makes them ideal for dry skins. A dry skin is hungry for oil *and* for moisture. A water-in-oil emulsion cream can furnish both. Generously applied it makes an over-night cream which does its job efficiently without mussing up the pillow. Lightly applied it presents a superior make-up foundation for dry skin. It won't make a good cleansing cream though, if developed along lines of the formula above. A suitable cleansing cream can be made with a W/O emulsifier of the hexitol derivative type and plenty of mineral oil, but its properties differ little from a conventional beeswax-borax cleansing cream and it does not then rate the advantages of the absorption base creams we are talking about.

The merits of absorption base creams, substantiated by their pharmaceutical use, point to cosmetic opportunities in as yet unexplored fields. For instance, men too suffer from dry skins. Some only occasionally, when the weather is rough, others all the time. And it makes their shaving problems worse. With several exclusive men's lines having "arrived" in recent years, a correctly perfumed absorption base cream seems a logical addition.

Children too are neglected customers. There are plenty of products for babies and for grown-up females. But the skin of girls—and boys—between 2 and 15 deserves care also, and the suitable kind of cream for them doesn't seem to exist yet.

Finally there is the tremendous market for sun-protective preparations which is far from saturated. Absorption base creams containing a sun screen in either the oil- or the water phase await their chance to go places in a big way.

Essential Services

(*Continued from page 531*)

hazard and it is a well-known fact that millions of people consult their pharmacists on health problems and generally receive sound advice.

The sale of even simple remedies requires certain training and experience found only in a pharmacist. There are a number of activities which, by law, state or federal, are restricted solely to a licensed pharmacist. Prescriptions cannot be filled except by a pharmacist, narcotic and other powerful drugs may only be handled and made into preparations by the pharmacist, poisons such as tincture of iodine, carbolic acid, and many others may only be sold and recorded by the pharmacist.

Insofar as the pharmacist's activities which are remote from actual pharmacy are concerned, these have been and are being curtailed by the increased requirements of a professional nature. These extraneous activities cannot altogether be condoned except in those cases where they do not in any way interfere with the professional services of the store. The reason for these miscellaneous activities are generally not understood. The very nature of the service rendered by a retail pharmacy required it to be available in many places where the amount of revenue to be derived from such work is not sufficient to cover the expensive investment in training, drugs, and equipment that a pharmacy involves. Thus the pharmacist has sought to participate in certain commercial activities as a means of remaining solvent since he had no alternative other than to close his doors. This would have deprived his community of a vitally needed source of medicinal agents and professional service.

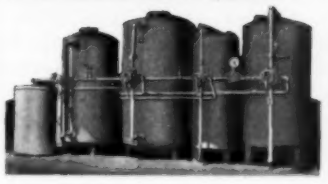
It is difficult to put an exact figure on the per cent of a retail pharmacist's time actually devoted to professional activities in order that he may be properly represented as engaged in an essential source. A value of over 40 per cent was given in a country-wide estimate recently made at Washington Headquarters of the American Pharmaceutical Association. If this figure seems low, it is due entirely to the unusual circumstances surrounding the retail practice of pharmacy. This particular professional pharmaceutical service is and has been so universally available that it is usually taken for granted. It would, however, be sorely missed in terms of public health if it were curtailed in any appreciable degree.

Lastly, but not least importantly, the modern pharmacist is a college trained man, the minimal degree being the Bachelor of Science, and the curriculum over the four academic years is of a substantial character, involving high level technical and cultural studies. Furthermore his license to practice is given only after he has successfully passed a rigid examination before the State in which he wishes to practice. Pharmaceutical service is and will continue to be "essential."

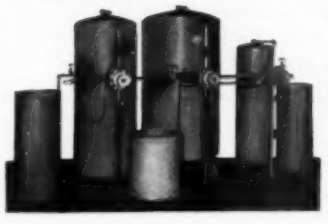
De-ionized Water...

. . . *replaces distilled water* in hundreds of leading war plants today! And it does so for a fraction of what distilled water costs! Purified water obtained by this modern, economical, ion-exchange method contains less than 1 to 5 p.p.m. of dissolved solids (plus colloidal silica, which can be removed if desired). The water is *not* evaporated, *so no heat is used in the process.* Yet the water produced meets the requirements for almost all chemical or industrial purposes; it is meeting exacting standards of drug and pharmaceutical houses, distilleries, laboratories, and vital industries such as aluminum, aviation gasoline, silica gel, butadiene, etc. Case histories in our files indicate the enthusiastic adoption of ILLCO-WAY Units by concerns requiring pure water, uniform at all times. For one thing, these units assure *reproducibility* of laboratory results in factory operation, regardless of the water supply. And, as stated, the water at all times is *uniform.* ILLCO-WAY De-ionizing Units have permissible flow rates ranging from 10 gallons per hour to 50,000 gallons per hour. Illustrated here are actual photos of typical ILLCO-WAY installations: a recent unit for an aircraft factory, capacity 2,000 gallons of De-ionized water per hour; a unit in a pharmaceutical house, capacity 1,700 gallons per hour; and a synthetic rubber plant installation, capacity 4,500 gallons per hour. Cost of De-ionized Water: 10,000 gallons for less than a dollar — on *average* raw water supply. When supply is low in dissolved solids, cost may be considerably less! If you use pure water in any of your processes or products, write for descriptive literature today! Find out how ILLCO equipment helps speed production and cut costs!

In an Aircraft Factory



In a Pharmaceutical House



In a Synthetic Rubber Plant

ILLINOIS WATER TREATMENT CO.

847 CEDAR STREET, ROCKFORD, ILLINOIS

Water Treatment Engineers

TESTED IN THE LABORATORY · PROVED IN THE FIELD

ILLCO-WAY

Citral and Its Uses

Citral is found in nature in such oils as Lemon, Lime, Mandarin, Verbena, Backhousia Citriadora and oil of Lemon Grass. It may be prepared synthetically by oxidation of Geraniol but its main source is that of Oil of Lemon Grass which is very reasonable in price and which contains large quantities of aldehyde. Lemon Grass formerly came from the East Indies and India but is now being raised in Florida, Central and South America with excellent results. It is also the basic essential oil used in the preparation of the ionones so valuable to the perfumer in making various special scents and in the violet odor. The main use of Citral has been for synthetic lemon flavorings and in certain eau de colognes where the citrus note is desirable. It is found, however, that if lemon oil is not too expensive, this is the better product to use in the case of cologne since the resultant odor is not so sharp and nauseating. Citral has a characteristic similar to the ionones of deadening the action of the olfactory nerve and to smell for any length of time will incapacitate the sense of smell temporarily. In the manufacture of various synthetic essential oils, such as artificial Lemon, Verbena and Lime, this product imparts a decided strength and blends well with the other products in the mixture providing they are of the citrus type. Caution should be used, however, that only a Citral of very high aldehyde content is used since if it is below 95% in aldehyde content, it is either old stock or has not been processed properly in which case the Lemon Grass odor will predominate instead of the lemony character of the Citral which is desired. Although curtailed somewhat due to the war conditions, Citral is still readily obtainable at a moderate price and it will probably continue to be because of domestic production of Lemon Grass.

Perfumer's Shelf

Star Anise

According to J. Small (*Food* 12:97, 1943), the oil of Chinese star anise, from *Illicium verum*, contains 80-90 per cent of anethole and related substances, also small quantities of *d*-pinene, *l*-phellandrene, ethyl ether of hydroquinone and probably safrole. Much of the aniseed oil of commerce, he reports, is derived from this plant.

Oil of Eucalyptus Concinna

The studies of G. E. Marshall and E. M. Watson, reported in the *Journal of the Royal Society of Western Australia* (through *Chem. Abstr.* 38:1073, 1944), show that the leaves of *Eucalyptus concinna* yield 1.7 to 1.8 per cent of a pale yellow oil containing 65 per cent cineole, 15 per cent alcohols mainly geraniol, small amounts of low-boiling aldehydes and aromadendrene, and no phellandrene.

The oil had the following characteristics: d. 0.923, n_D 1.4650, $[\alpha]_D$ – 0.18°, soluble in 2 volumes of 70 per cent alcohol, acid no. 1.2, ester no. cold 7.5, hot 8.9.

Asafetida and Myrrh

Asafetida, employed medicinally and used as a condiment in the East, is obtained from *Ferula foetida* and other species. As reported by J. Small (*Food* 12:125, 1943), it consists of 25 per cent of gum, 40-64 per cent of resin, and 6-17 per cent of a violatile oil containing pinene and an organic disulfide, umbelliferone has also been found in it.

Myrrh, obtained from *Commiphora molmol*, is also employed medicinally and for anointing. As pointed out by Small, it contains 50-60 per cent of gum, 25-40 per cent of resin, and a volatile oil in which is present eugenol, *m*-cresol, cumaldehyde, formic acid, acetic acid, myrrholic acid ester, and a sesquiterpene, heerobolene.

Menthone in Peppermint Oil

L. H. Baldinger (*Proc. Indiana Acad. Sci.* 52:111, 1942) made a study to determine whether the constituents of oil of peppermint, other than menthone, would react with specific test materials to cause a variation in the menthone content. To this end, an artificial peppermint oil was prepared from 13.87 per cent alphapinene, 4.71 per cent menthyl acetate, 51.16 per cent menthol and 30.26 per cent menthone. Two methods were used for determining the average percentage of apparent ketone. The results showed an average experimental value for the menthone content of 34.15 per cent. Thus the presence of various components in peppermint oil definitely affects the apparent menthone content and the percentages of the several constituents must be considered in determining the pure menthone content.

Aromatic Mixtures

According to German Patent 665,892, granted to B. Franke, to make mixtures of aromatic materials such as vanillin, heliotropin or coumarin, the substances are mixed with an extender such as flour. The mixing can be done either during or shortly after grinding the aromatic substance. In this process, each aromatic substance is prepared by grinding and mixing with an extender separately, then these preparations are mixed together and pressed into tablets.

Insect Repellent No. 612

Writing in *Chemical and Engineering News* (22:416, 1944), H. B. McClure of Carbide and Carbon Chemicals Corp. tells about No. 612 Repellent, an important ingredient in the skin camouflage preparations developed for the army. This compound, 2-ethylhexanediol-1,3, is among the best mosquito repellents found of over 700 synthetic organic chemicals tested.

Ethylhexanediol is a high-boiling (243° C.), nonvolatile, nonirritating, colorless glycol with a faint odor reminiscent of witch hazel. It can be used to repel mosquitoes, biting flies, gnats, chiggers, and fleas, even under strenuous combat conditions, either in a liquid form, such as Formula 612, or incorporated in a cosmetic cream. It makes an excellent ingredient for a cosmetic cream because it resembles glycerine in its softening action on the skin. Certain cosmetic manufacturers produce a dual-purpose camouflage colored cream that is easily carried, safe for the skin, and mosquito-repellent for several hours. A cream containing ethylhexanediol has been found to give six hours' protection with one application.

Although carloads of Formula 612 have been made available for the armed forces, ethylhexanediol will probably be available only in "research" quantities for the duration, but research studies can be started now.

Perfumes and Soap Discoloration

In a carefully controlled study of the factors responsible for the spotting and discoloration of soaps, Dr. Sadgopal (*S.P.C.* 17:176, 1944) found that the perfume employed is an important factor in the undesired darkening. For the purpose of studying the several factors involved in soap discoloration, this worker made a settled soap of caustic soda, using the following fat-charge: Mutton Tallow (Refined) 60% + Sweet Almond oil 20% + Olive oil 10% + Coconut oil 10%.

This particular base was selected after a number of trials as it gave a more or less colorle s soap base containing 0.1 per cent of salt only. The soap base was properly chipped and dried so as to bring the moisture content to about 10 per cent. These soap chips alone were used for further trials.

Using this soap base, a number of cakes were prepared with 2 per cent of the perfuming materials given in the table, which also includes the results of the studies. The soap cakes were then exposed to the action of diffused sunlight of the room, direct sunlight and quartz lamplight, while a control sample each of the perfumed as well as unperfumed cakes was kept in a dark place. Care was taken to avoid the possibility of dust affecting these experiments.

Results of these studies indicate that:

(1) Unperfumed soaps do not discolor in the absence of air. Perfumed soaps also behave likewise but are slightly discolored in case of exposure to quartz lamplight.

(2) Certain perfumes discolor soaps very rapidly, some do so very slowly, while others do so after very long exposure only.

(3) Light accelerates the process of discoloration.

Sadgopal points out that Stadlinger's view that the spots on toilet soaps are caused by a separation of the mixture of soap and perfume, the latter being subsequently oxidized, is not supported by experimental facts. It has been seen in the above experiments that unperfumed soaps have also exhibited discoloration in the presence of air, even though after a long time had elapsed.

Also studied and reported were the effects of such factors as: quality of raw materials, dyestuffs, handling and care of plant and equipment, metallic contact, action of additional medicaments and special agents, the presence of catalysts in hydrogenated fats, and the effects of moisture, atmospheric air, light and temperature on the soap.

Darkening Effect of Perfumes

Perfumes	*Observations on Darkening and Spotting in* *Diffused light Discoloration within*	*Direct light Discoloration within*	*Quartz lamp light Discoloration within*
1. Methyl Anthranilate	132 hours	73 hours	18 hours
2. Dimethyl Anthranilate	118 "	60 "	15 "
3. Indol 10 per cent	98 "	49 "	11 "
4. Skatol 10 per cent	87 "	38 "	7½ "
5. Heliotropine	168 "	97 "	34 "
6. Aubepine	187 "	120 "	53 "
7. Vanillin ex Eugenol	106 "	57 "	16 "
8. Ethyl Vanillin	102 "	52 "	14 "
9. "Aurantiol"	105 "	60 "	16 "
10. Benzaldehyde	212 "	167 "	74 "
11. Bromstyrol	176 "	132 "	56 "
12. Citral	124 "	80 "	20 "
13. Methyl Eugenol	94 "	37 "	13 "
14. Methyl Salicylate	101 "	45 "	15 "
15. Eugenol	106 "	43 "	23 "
16. Iso-Eugenol	132 "	64 "	31 "
17. Methyl Iso-Eugenol	67 "	29 "	10 "
18. Geraniol ex Palmarosa	No discoloration in either case even when kept for 15 days		Subsequent slow discoloration
19. Geraniol ex Citronella	" "	" "	" "
20. "Terosenol"	" "	" "	" "
21. "Santalol Rose"	" "	" "	" "
22. Rhodinol	" "	" "	" "
23. "Jasminyl Acetate"	Discol. within 156 hours	Discol. within 89 hours	Discol. within 34 hours
24. "Rosenol"	No discoloration in either case even when kept for 15 days		Discoloration after 17 days
25. "Patchouliol"	" "	" "	" "
26. Unperfumed Soap	No discol. for 30 days	Slight discol. after 25 days	Discol. in 19 days
27. Unperfumed Soap kept in vacuum	No discoloration in any case, even on very prolonged and continuous exposure		
28. Unperfumed Soap kept in dark	Slight discoloration took place after 55 days only		
29. Soap perfumed with Methyl Iso-Eugenol and kept in dark	Discoloration began after 14 days		
30. Soap perfumed with Methyl Iso-Eugenol and kept in vacuum	Very slight discoloration after 34 days in case of exposure to quartz lamplight only.		

Autoxidation Impurities in Alcohol

Because a recently purchased sample of ethyl alcohol obtained from molasses was found to have an unpleasant odor, although conforming to B. P. tests, A. E. A. Werner (*Analyst* 68:365, 1943) undertook a series of comparative tests on this specimen and on alcohol obtained from grain and potatoes in order to study the formation of aldehydes and peroxides.

Tests for aldehydes were performed by adding 1 ml. of Schiff's reagent to a dilution of 2 ml. of each sample and 7 ml. of water. A purple-red color, developing to its maximum intensity in fifteen minutes, was observed with the samples from molasses and potatoes, being much more pronounced in the case of the former; grain alcohol gave negative results. It is necessary to dilute the samples of alcohol with water in performing this test, since grain alcohol develops a color which is apparently due to some change in Schiff's reagent and not to the presence of aldehydes.

Each of the alcohols was examined for peroxides by adding 5 ml. of a 2 per cent ammonium thiocyanate solution to a 2 ml. sample, followed by a crystal of ferrous sulfate. The molasses alcohol rapidly developed a blood-red color, and the potato alcohol gave a weak positive reaction. The grain alcohol gave a negative reaction.

That the development of aldehydes and peroxides is due to a process of autoxidation was shown by exposing samples of the alcohols to sunlight for three months. Another sample of the molasses alcohol was preserved in the dark as a control; to another sample of this product exposed to sunlight were added a few crystals of ferrous sulfate as a catalyst. At intervals of one month the aldehyde and peroxide concentrations were estimated colorimetrically by comparison with the control. Autoxidation was most pronounced in molasses alcohol, but it was completely absent from grain alcohol. Potato alcohol was intermediate in position. Ferrous sulfate greatly catalyzed the development of aldehydes in molasses alcohol; the small amount of peroxides formed decomposed within one month, and were absent in subsequent examinations.

It is believed that autoxidation in alcohol obtained from molasses and potatoes is induced by a small amount of some impurity which is not removable by distillation.

Lovage Root Constituents

In a study of the conposition of the essential oil and resinoid of lovage root, Y. R. Naves (*Helv. Chim. Acta.* 26:1281, 1943) extracted the root with benzene and then distilled the extract with steam. The volatile fraction consisted largely of phthalide derivatives, including much butylidine phthalide, butyl phthalide and sedanoic anhydride and traces of butyl dihydrophthalide and tetrahydrophthalide. Also present were butyric acid, carvacrol, coumarin, sesquiterpenes and eugenol. The non-voltaile resinous fraction contained palmitic acid, hydrophthalide acids, bergaptene and other compounds.

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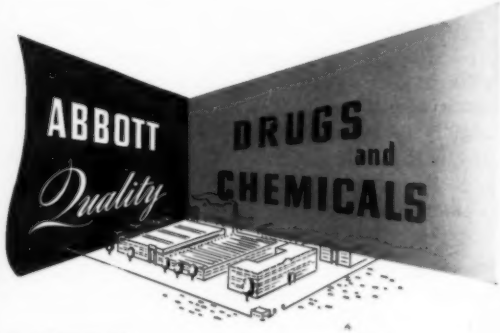

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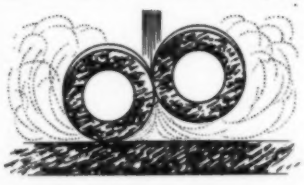

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Compounder's Corner

New Vitamins B-10 and B-11

The discovery of two new members of the vitamin B complex was announced at the spring meeting of the American Chemical Society by G. M. Briggs, Jr., T. D. Luckey, C. A. Elvehjem and E. B. Hart of the University of Wisconsin. Obtained in liver concentrates, the two newcomers have been tentatively called vitamin B-10 and vitamin B-11. Investigations so far have revealed them to be essential for the chick, white rat, dog and monkey, with indications that they are also important for human well being.

Vitamin B-10 has been found to be necessary for normal feather production in the chick. When it is absent in the diet of the young chick, the feathers become brittle within a few weeks and fall off. It is not yet known what function this "feather vitamin" plays in the nutrition of mammals.

Vitamin B-11 has been found necessary for the proper growth of the chick. Dietary deficiency of this vitamin causes the chick to stop gaining weight at about three weeks of age, with subsequent weakness and anemia. Death results unless a source of the vitamin is supplied.

At the same meeting, G. J. Martin of the Warner Institute for Therapeutic Research presented evidence that riboflavin may be one of the important links in the chain of events responsible for high blood pressure.

Beeswax Substitute

Synthetic waxes as replacements for natural beeswax hav been made available for use in the manufacture of cosmetics and pharmaceuticals. They are said to form stable and homogenous emulsions and creams when used in place of the natural wax. A comparison of chemical and physical constants indicates that these synthetic replacements have properties practically identical with natural beeswax. These new compounds are being distributed by the Cornelius Products Company, 432 Fourth Ave., New York 16, N. Y.

Leg Make-up Dermatitis

After using a leg make-up preparation for about three weeks, a young woman suddenly developed an acute dermatitis. With the cooperation of the manufacturer, F. A. Ellis (Arch. Dermat. & Syphil. *49:197, 1944*) *was able to trace the responsible factor, which in this case proved to be a dye (FD&C Yellow No. 3) similar to that used for coloring oleo-margarine. A survey of the literature made by Ellis did not disclose any reports of contact dermatitis due to leg make-up. He concludes that in view of the large number of women who use such preparations the ingredients of leg preparations are poor sensitizers.*

Instrument Sterilizing Solution

M. L. Tainter and his associates (*J. Am. Dent. Assoc.* 31:479, 1944) have developed a new mixture which has been used successfully as a chemical sterilizing solution for dental and surgical instruments, thereby avoiding heat sterilization and such undesirable effects as corrosion and dulling of cutting edges.

The sterilizing solution, developed after considerable work, consists of:

Isopropyl alcohol	1,000 cc.
Oil of rose geranium	2 cc.
Oil of cinnamon (or cassia)	4 cc.
Distilled water	780 cc.
Sodium nitrite	4 Gm.
Monoethanolamine or triethanolamine	60 cc.
Solution of formaldehyde U.S.P.	160 cc.

The ingredients are mixed in the order given, to avoid overheating. If the formaldehyde is not fresh, there may develop within the first few days, after mixing, a slight precipitate of the polymers of formaldehyde. The polymerization products, after they have been separated out, can be filtered or strained off, leaving a solution that will remain clear indefinitely. The solution can be colored, if desired.

The mixture should not be diluted. Care should be used in handling the mixture, as frequent contact with the skin is liable to result in dermatitis. This can be easily avoided by indirect immersion of instruments. When dirty instruments are put into this mixture, the fluid will need to be changed frequently because of the precipitated protein collecting in the container. In addition, the presence of blood, pus or other foreign material on instruments slows down the penetration of the antiseptic to the organisms below the surface and therefore diminishes the efficiency of sterilization. However, when the instruments are reasonably clean, immersion for from five to ten minutes in, and swishing or agitating the pieces for over-all contact with, the mixture will kill the ordinary pyogenic organisms with a satisfactory margin of safety. Immersion for four or five hours will kill even the most resistant spores.

Acidity and Antiseptic Efficiency

Using yeast cells and Bacterium coli *as the test organisms, O. Rahn and J. E. Conn* (Indust. & Engin. Chem. *36:183, 1944*) *have found that benzoic acid, salicylic acid, and sulfurous acid are nearly a hundred times as efficient antiseptics in strongly acid solutions as they are in neutral solutions. With benzoic and salicylic acids, only the undissociated acid is antiseptic; the benzoate and salicylate ions appear to have practically no effect on yeast. Multiplication of the yeast was inhibited whenever the undissociated benzoic acid concentration was above 25 mg. per 100 ml. With salicylic acid the limiting concentration was 4 mg. of undissociated acid per 100 ml. Sulfur dioxide in water dissociates to harmless SO_3—ions, and to HSO_3-ions which inhibit the multiplication of* Bacterium coli *but not of yeast. The yeast is inhibited only by undissociated H_2SO_3. The rapid death of yeast is brought about by 7 to 8 mg. of undissociated H_2SO_3 per 100 ml.;* Bacterium coli *can tolerate nearly ten times as much.*

According to these workers, the different efficiency of undissociated molecules and ions of the same acid may be explained by the fact that it is difficult for ions to permeate living cell membranes.

Extracting Fish Liver Oils

During the period of discovery of new sources of vitamin oils from fish livers, reports R. T. Carruthers in *North Western Druggist* for March 1944, processing methods have constantly changed. Each species requires different handling and it has been necessary to strive continually for increased efficiency in vitamin extraction. Some of these methods have been the closely guarded secrets of the individual producers, but extraction is accomplished in the main by two fundamental processes:

1. By direct application of steam or hot water and subsequent centrifugation. This process lends itself best to livers of high oil content; to livers for instance such as those from the sharks which have an oil content ranging up to 70% of the whole liver.

2. The second method involves the breakdown of the proteins by alkaline digestion. Such a procedure is necessary for livers of the sole, ling cod, halibut, etc., with oil contents averaging only around 12% and running even much lower. With the large mass of protein reduced to a semi-liquid state, emulsions are avoided and high speed centrifugation accomplishes a separation of the light and heavy phases.

A third method, that of solvent extraction, was explored in the early days of the development but never attained much favor as a commercial process. Recently, however, there has been a revival of interest in the possible commercial use of solvent extraction of liver oils and better knowledge of the problems involved and more adequate equipment may now make the use of this method feasible.

Obviously, there are many refinements of these basic methods. For instance, the recovery of residual vitamins not spun out with the oil but somehow held in the water phase, absorbed perhaps by the protein fragments, is a problem that has been given much study. The refining of high acid oil and preparation of clean sweet oil from old livers that have been improperly stored can be done, but fortunately the necessity for this is at a minimum as the fishermen and buyers now realize that such processing results in a direct loss of vitamin values. Many processors now refuse to handle any but strictly fresh or properly frozen material.

Two very intriguing and comparatively recent developments are of major importance to the vitamin industry. The first of these is Hickman's discovery of molecular distillation, a means of concentrating the oil soluble vitamins. Vitamin A concentrates are made either by the Hickman high-vacuum distillation process or by the older methods of saponification though modifications and combinations of the two methods may be employed. The second advance is the invention of a process for the continuous production of seamless gelatin capsules. Both have contributed greatly to the popularization of vitamins.

Cationic Soap Action

According to an editorial comment in the J.A.M.A. *(124:709, 1944), the term cationic soap is applied to synthetic detergents which are excellent germicides and are also effective skin cleansers when employed in aqueous solutions at about 1 per cent concentration. In the course of studies on the effectiveness of these agents for rapid degermination of the hands, Miller and his associates* (Proc. Soc. Exper. Biol. & Med. *54:174, 1943*) *discovered that these materials deposit a nonperceptible film on the skin which retains bacteria underneath it and is resistant to mechanical trauma. Thus, while the outer surface of the film exerts a strong germicidal action, the inner surface of the film has a low bactericidal power. These observations, notes the editorial, introduce a further complication into the evaluation of products of this type.*

Finely Divided Calcium Carbonate

Pure, finely divided calcium carbonate has uses in cosmetics. Many methods have been suggested for manufacturing calcium carbonate of a high degree of purity and fine particle size. Most of these methods involve the reaction of calcium compounds with alkali metal carbonates or alkali metal hydroxides and carbon dioxide, but in such methods the precipitate must be extensively washed with water to obtain the requisite freedom from soluble alkali. To obviate the long and tedious washing operation F. L. Clark and W. P. Foster have developed and patented (British Pat. 555,479) a method for the manufacture of finely divided pure calcium carbonate from soluble calcium compounds, which avoids the need for extensive washing of the precipitate.

In one method of carrying out the invention which illustrates a batch process, a solution containing 3-7 per cent by weight of ammonia and 4-9 per cent by weight of carbon dioxide is dumped at 30°-40° C. into a solution containing 10-40 per cent by weight of calcium chloride and 0.1 per cent by weight of gelatine, while stirring. The resulting suspension is immediately poured into ten times its volume of cold water while stirring. The calcium carbonate is separated either by filtering, which gives a filtercake containing 40-50 per cent of solids, or by centrifuging, which gives a material containing 60-70 per cent of solids and subsequently dried at a temperature of 150°-200° C.

Hair Dye Patent

In U. S. Patent 2,338,746, W. F. Van Riper and W. J. Zinch claim to have made improvements in hair dyeing procedures, more especially in decreasing the time required. It is claimed that this invention serves to provide new hair dyes and new methods for their application that will preserve the natural appearance of hair and that will produce a large variety of shades by processes which can be operated easily and conveniently to produce final results in a very short space of time.

The objects of the invention are attained in general by applying to the hair, and mildly heated, a lake-forming metal salt and a water soluble synthetic organic dye, both of which are in aqueous solution.

In a typical example given in the patent old gray hair which had been bleached was treated with a 5% mordant solution of ferrous sulfate and an 0.5% solution of the following dye mixture simultaneously for 10 minutes at 110° F.

	Parts
Pontachrome Brown G (C. I. 238)	**45.5**
(C. I. 238)	**45.5**
Pontachrome Yellow SW (C. I. 195 and Prototype 56)	**9.0**
Logwood crystals (C. I. 1246)	**45.5**

After this treatment a further application of an 0.5% dye solution was made for 10 minutes at 110° F. The hair came to a final shade in about 20 minutes and was then washed and dried. The hair had a natural appearance in a dark brown shade and had good washing and other properties desired for colored human hair. The penetration of the color was rapid and complete.

Similarly, lighter shades of brown, such as drabs, can be made by using concentrations of ferrous sulfate as low as an 0.5% solution and dye solutions as low as 0.1%.

Permanent Wave Preparation

Hair itself plays an important role in a permanent wave preparation according to German Patent 734,889, granted to F. Geier: In this method, dissolved hair is added as a protective colloid to preparations used for permanent waves.

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FACE AND HAND LOTIONS: Isopropyl Alcohol evaporates slowly; has little tendency to dry the skin, and aids in keeping the skin soft.

AFTER SHAVE LOTION: Isopropyl Alcohol is excellent for this product because it aids the after-cooling and skin-freshening qualities of the lotion.

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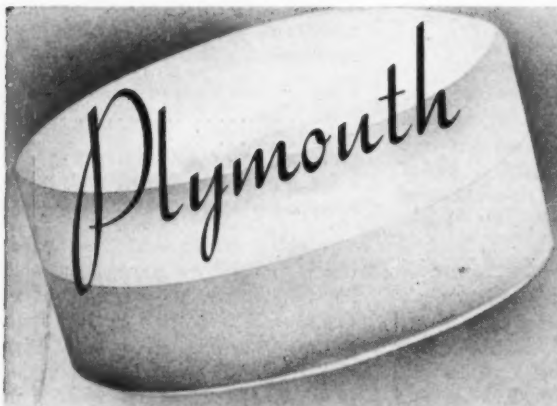

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ADVANCING THERAPY

Penicillin and Cancer

In a brief preliminary report in *Science* (99:247, 1944), I. Cornman described the effects of penicillin on cancer cells. Penicillin (Squibb's sodium salt of penicillin) was added to cultures containing both sarcoma cells and normal fibroblast cells, and with proper dosage, it was found possible to kill all the cancer cells without injury to the normal cells. Higher doses of penicillin damaged non-malignant cells, but the quantity required was two to three times that required to produce an equivalent injury to malignant sarcoma cells.

In twenty-five experiments, the penicillin-treated tumor cultures were implanted into a susceptible strain of rats. Treated cultures failed to produce tumors whereas untreated cultures produced tumors in the animals. Obviously, further work along these lines is needed for fuller evaluation.

Use of Salvaged Red Cells

Red cells, salvaged from donors' blood used in preparing plasma, are finding increasing use in therapeutics. In a paper in the *J.A.M.A.* (124:961, 1944) W. B. Cooksey and W. H. Horwitz report that 15,000 bottles of resuspended red blood cells were supplied to fourteen Detroit hospitals. A careful follow-up study of approximately one-third of these cell transfusions showed very favorable clinical results. Moreover, the percentage of reactions was lower than from whole blood transfusions in the same hospitals.

Striking clinical improvement was noted in several severely anemic patients to whom a liter or more of suspended cells was given daily for several days. In addition, red cell suspensions have proved of value following acute blood loss of all kinds, in the later stages of burns and in numerous cases of debilitating illness, such as malignant conditions, tuberculosis, blood dyscrasias and severe chronic infection. However, red cell suspensions have not been used when pronounced hypoproteinemia is present.

Isotonic, pyrogen free, sterile saline solution proved more satisfactory than a number of other solutions for preserving the centrifuged cells up to five days. Careful aseptic technic preserved the sterility of the cells. Both type specific and type O cells were used at first, but later only type O cells were distributed. The use of type O resuspended cells is recommended to minimize transcription errors and to eliminate as far as possible any incompatibility reactions.

Gold Salts in Arthritis

One hundred patients with rheumatoid arthritis were treated by J. W. Graham and A. A. Fletcher (*Canadian M.A.J.* 49:483, 1943) with at least 1.06 Gm. of gold sodium thiosulfate given in small divided doses. Of these, 67 per cent underwent remission or were very much improved, and another 20 per cent showed moderate improvement. The authors feel that a valuable addition has been made to the treatment of rheumatoid arthritis by the use of gold salts and that the toxic reactions, though serious, are not as bad as the downward course of the disease. The drug is regarded not as a cure, but rather as a check to the reactions that are manifest in joint conditions. Emphasis is laid on the importance of the erythrocyte sedimentation test which appears to be the most sensitive index of improvement and may be used to decide when treatment should be commenced or resumed. In addition to gold therapy, they found that rest, controlled activity, orthopedic therapy, avoidance of extremes of temperature and the maintenance of good nutrition appeared to insure a more lasting benefit to these arthritic patients.

Phytoncides in Wound Treating

Phytoncide is the name given by B. Tokin to the volatile substance produced by onion, garlic or other allied plants, and endowed with strong bactericidal and protistocidal properties. The chemical nature of the phytoncides or plant bactericides still remains obscure, but it has become evident that they are not identical with the essential volatile oils of the plants.

Although the bactericidal nature of onion and garlic vapors have been known to American workers for some years, it appears that Russian workers are the first to apply this action in the treatment of infected wounds. In the *American Review of Soviet Medicine* (1:244, 1944), J. V. Toroptsev and A. G. Filatova report on vaporization treatments with onion pastes, so applied that the wounds do not come into direct contact with the onion paste itself. Vaporization was administered for 10 minutes, usually in five-minute intervals, each day. "Unusually gratifying results were obtained" in the treatment of amputations of the extremities that had not healed because of purulent inflammation in the wounds. Although the daily dressings necessitated by the treatment did not give the wounds the required rest, regeneration proceeded rapidly, being evident after the very first treatment with phytoncides. This beneficial action is attributed to the powerful bactericidal effect of the phytoncides.

Local Burn Therapy

In an extensive discussion of the treatment of burns as practiced on board a hospital ship, R. A. Kern and his associates (*U. S. Naval Med. Bull.* 42:59, 1944) stress that a prime requisite in guarding against infection of burns is the use of an aseptic technic in dressing, including the masking of attendant personnel. The preparation of the burn area for the local treatment calls for simple cleansing (liquid petrolatum and sterile cotton waste to remove fuel oil; plain soap and water) and a minimal debridement. The method of local treatment best suited to naval conditions is one that is applicable to all burns. Tannic acid, paraffin wax and triple dye are not suitable. Tannic acid must not be used on the face, ears, or hands. Not one of the methods mentioned is applicable to an infected burn or in the preparation for skin grafting or to a patient with wounds or fractures. Sulfathiazole, either in 3 per cent ointment with a water soluble base or as a dusting powder with wet saline dressings, meets all requirements. Skin grafting should be done early to prevent scar formation.

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Parenteral Fluids Evaluated

In a report on the comparative value of various parenteral fluids, G. A. Bradasch (Anesthesiol. 5:1, 1944) reviews the physiologic factors that enter into the maintenance of a normal body fluid balance, giving particular attention to the role of water, the electrolytes and the blood proteins. Crystalloids are effective for replacing lost electrolytes and for combating metabolic disease. Because of ready diffusibility, crystalloids generally are not satisfactory as supportive agents in hemorrhage or shock. Acacia, because of its toxic effects, is not entirely satisfactory as a parenteral supportive fluid even though it possesses suitable colloidal properties. Bovine plasma, bovine albumin, isinglass, crystalline hemoglobin, human ascitic fluid, cadaver blood and placental blood, because of limited availability or uncertain properties, cannot be considered practical agents for general parenteral use. Pectin, because of its plasma-like osmotic properties, easy availability and nonantigenic qualities, has promise of being a suitable supportive agent for parenteral use. Human serum albumin and human plasma are agents of unquestionable value as parenteral supportive fluids. Ease of storage and transport and the stability of these agents make them highly valuable as blood substitutes. Whole blood remains the best agent for treatment of acute blood loss or shock.

Treating Dermatophytosis

In a consideration of fungous infections of the foot, M. R. Caro (*J.A.M.A.* 124:751, 1944) remarks that the many systems of treatment and the great number of drugs recommended indicate that there is no specific cure for dermatophytosis. While it is relatively easy to destroy fungi in the test tube, on the foot it is more important to adapt the treatment to the clinical state of the dermatosis rather than to the particular species of fungus present. In cases of mild intertriginous infection the use of antiseptic dusting powders, such as borated talc with the addition of 2 per cent salicylic acid, or mild tincture of iodine, may be effective. In acute vesicular cases great relief may be obtained by removing the tops of the vesicles with scissors and applying continuous cold wet dressings of a 1:4,000 aqueous solution of potassium permanganate or a 1:16 dilution of solution of aluminum acetate. Such wet dressings tend to allay the inflammation and to reduce the hyperhidrosis which generally accompanies these infections.

When the acuteness of the process has subsided, stronger measures may be introduced. Fissures may be painted with a 5 per cent solution of silver nitrate. Foot baths in a 1:4,000 solution of potassium permanganate may be continued, and in addition keratolytic agents, such as diluted ointment of benzoic and salicylic acid, may be applied. Mild tincture of iodine may be used or any of the dyes that are recommended as fungicidal agents, such as 2 per cent gentian violet solution or Castellani's paint. In cases of the chronic hyperkeratotic form stronger medication is often necessary, but the strength of the drugs used should not be increased more rapidly than the tolerance of the skin will permit. Ointment of benzoic and salicylic acid to which 1 per cent thymol has been added is a time honored remedy, and ointments of phenylmercuric nitrate (1:1,500), crude coal tar (1 to 5 per cent), anthralin (dihydroxyanthranol) (0.1 per cent to 1 per cent) and chrysarobin (1 to 10 per cent) are often useful. Roentgen rays are in general use in treating the chronic infections, and they form a valuable adjunct in the treatment of dermatophytosis. The use of camphorphenol mixtures is at times followed by burns, and the benefits to be derived are hardly worth the risk. Biologic therapy with trichophytin has generally proved disappointing.

In moniliasis, an infection of the skin, caused by a yeastlike fungus, it is essential to rule out the presence of diabetes mellitus and if present this disease must be treated before improvement in the skin disease can take place. Almost specific in the local treatment of monilial infections of the skin and nails is a 1 per cent aqueous solution of gentian violet. Roentgen rays are beneficial, especially in paronychia. Ammoniated mercury ointment (3 to 5 per cent) is often effective. While in some cases cold wet dressings of a solution of potassium permanganate (1:4,000) reduce the inflammation and oozing, good results are more often obtained by keeping the infected parts dry. Soap and water should not be used, and the foot should be dusted frequently with borated talc or with powdered starch.

Airsickness

Observations made on 1,006 flying personnel in a combat bomber crew training unit showed that an average of one in six of all personnel suffered attacks of airsickness regardless of previous air experience. According to D. M. Green (J. Aviation Med. 14:366, 1943), these observations suggest that airsickness primarily is not a motion sickness but a true aeroneurosis. On this hypothesis a therapeutic approach was devised. Thirty-five crew personnel grounded for repeated severe airsickness were scheduled in small groups for daily flights of graded duration. Prior to take off, pentobarbital sodium 0.100 Gm. and atropine sulfate 0.0013 Gm. were administered orally to each man. On successive flights personnel were rotated as far as possible through different positions in the airplane. On reaching a stage in which a three hour period caused no distress, transfer to the combat plane was made and medication gradually eliminated. Ten men were restored to full flying status and have given no indication of relapse. Nine have improved to the point of being placed on crews on probationary status. Four were transferred prior to completion of treatment. Six showed no perceptible improvement.

Ascorbic Acid as a Diuretic

In a preliminary report on the diuretic effect of ascorbic acid, C. F. Shaffer (*J.A.M.A.* 124:700, 1944) states that the vitamin given by mouth in a daily supplemental dose of 500 mg. resulted in a small diuresis in ten patients with cardiac decompensation. However, when the ascorbic acid was given by vein there was no appreciable similar effect. Most significant was the observation that when ascorbic acid was used in combination with the mercurial diuretic, mercupurin, there was a relatively large diuresis of from one-half to two and one-half times greater than with mercupurin alone.

On the basis of animal experiments it is believed that the diuresis caused by ascorbic acid is due to altered colloid osmotic pressure. It is not due to production of acidosis.

Aspirin and Hemorrhage

Although the mass of evidence so far available indicates that aspirin and the salicylates are among the least toxic of active pharmacological preparations, new data indicates that these drugs are capable of producing a physiologic effect which cannot be ignored. An editorial in the *J.A.M.A.* (124:777, 1944) summarizes evidence which shows that aspirin and related drugs may contribute to hemorrhage by causing a decrease of the prothrombin of the blood. The administration of vitamin K prevents this fall in prothrombin levels. However, it does not seem necessary to administer vitamin K to all patients receiving salicylates; those who are to receive large doses for a long time may appropriately be given vitamin K.

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PURCHASING DEPARTMENT

O.P.A. Ceiling On Brazil Menthol Set at $15; Prior Contracts Not Affected

Action to reduce substantially prices paid to foreign sellers for imported natural menthol was taken by the Office of Price Administration. Effective as of April 17, a ceiling price of $15 per pound duty paid, f.o.b. a United States port of entry is established for all importers, whether industrial users or resellers. An exception is made for any importer who has purchased menthol by establishing an irrevocable letter of credit prior to the above stated date. In this case the importer will be permitted to take delivery at the contract price.

OPA said that industrial users of the product, much of which formerly came from Japan and China, but now comes chiefly from Brazil, have been paying as high as $21 a pound in an effort to outbid each other for available supplies. On the other hand, said OPA, importers who resold the product could not afford to pay as much as the direct purchasing industrial users because they were not permitted to include in their selling price any increase over their suppliers' price on August 20th last year, which was generally $13.20 a pound.

This action does not affect menthol produced in the United States, either natural or synthetic, both of which continue under the general maximum price regulation.

Importers resale price will be $16.50 to $16.90 per pound. So far as the present spot market goes, it was said that when deliveries could be made goods were invoiced at $16.50 per pound.

The new ceilings for the United States turned out to be substantially higher than the government originally had considered to be a fair price when compared with what it had understood Brazilian home consumers had been paying.

Reports about the spot market are mixed with some trade factors reporting that Brazilian houses are continuing to quote prices above the OPA ceiling, and others stating that a good many sales have been made within the price ceiling established by the Government agency. The main reason for establishing a ceiling at which importers are permitted to sell, is to influence the flow of goods to reliable firms who had placed contracts in Brazil for material earlier in the year and to discourage the shipment of goods against contracts that had been placed at much higher prices for the account of speculators.

While there is likely to be much opposition to the ceilings, it is explained here, nevertheless they should go a long way in encouraging the completion of contracts for the account of those houses who had purchased goods for actual consumption here. Indications are that fairly good quantities will come forward over the next two months. Recent arrivals here amounted to about 112 cases, or a little over two tons. This failed to have the slightest effect upon the spot market since it is understood that the goods had been sold while in transit.

APRIL PRICE CHANGES

UP

Arnica flowers 15c
Cedar leaf oil $1.45
Citral 15c
Clove oil 5c
Elm bark 3c
Lemon grass oil 15c
Rue oil 59c
Sabadilla seed 4c
Saffron Spanish $2
Sarsaparilla root, Mex. 2c
Spruce oil $1.35
Witch hazel leaves 5c

DOWN

Almond oil sweet 5c
Aloes Curacao 5c
Apricot kernel oil 2c
Arabic gum sorts ½c
Bay oil 10c
Cardamom oil $1
Chamomile flowers, Hung. 5c
Citronella oil Ceylon 5c
Colocynth pulp 5c
Mercury bichloride 20c
Calomel 30c
Mercury metal $5
Red precip. powd. 30c
White precip. 30c
Spartein sulfate 45c
Tragacanth gum No. 1 $1
No. 2 $1

• Prices quoted in this section were current on the first of this month.

FINE CHEMICALS

Consumption of medicinal drugs continued to require full production of almost every item on the list. But, for the most part, the spot market lacked price movements in any broad degree.

Of outstanding importance was the establishment of a ceiling price of $15 per pound, duty paid, f.o.b. a United States port of entry for all menthol imports.

Mercurials Reduced

Reductions in the major mercurials ranging from 20c to 30c per pound and a further easing in mercury are among the important developments. With raw material down to $125 a flask, the derivatives were repriced as follows: mercury bichloride $1.59, reduced from $1.79; calomel $2.05, reduced from $2.35; red precipitate powd. $2.36, reduced from $2.66; white precipitate $2.14, reduced from $2.44.

The decline in the major mercury derivatives is about the third this year and in view of a narrowed demand and reports of additional quantities coming upon the market, it would not be surprising to see a continuation of the downward trend.

Penicillin

Rapid strides in production of penicillin has made it possible for the War Production Board to consider releasing at an early date a part of each producer's output, but under War Production Board control. It is contemplated that initial releases will be made only for sale

(*Continued on page 593*)

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DANDELION ROOT
DILL SEED, Indian
ERGOT OF RYE
FENNEL SEED, Indian
FOENUGREEK SEED
GENTIAN ROOT
GINGER, Jamaica, Calicut
GRAINS OF PARADISE
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IRISH MOSS
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LAUREL LEAVES
LAVENDER FLOWERS
LINDEN FLOWERS, with Leaves
MAHUANG, Chinese
MARJORAM LEAVES
NUX VOMICA
OAK MOSS
ORANGE OIL, Sweet
ORRIS ROOT
PEPPERMINT OIL
PIMENTO, Jamaica
POPPY SEED, Indian
PSYLLIUM SEED AND HUSKS
QUINCE SEED
RHUBARB ROOT
ROSEMARY LEAVES
ROSEMARY OIL
SAGE LEAVES
SARSAPARILLA ROOT
SAVIN OIL
SAVORY
SENNA LEAVES AND PODS
SESAME SEED, Hulled and Natural
STRAMONIUM LEAVES
STROPHANTUS SEED
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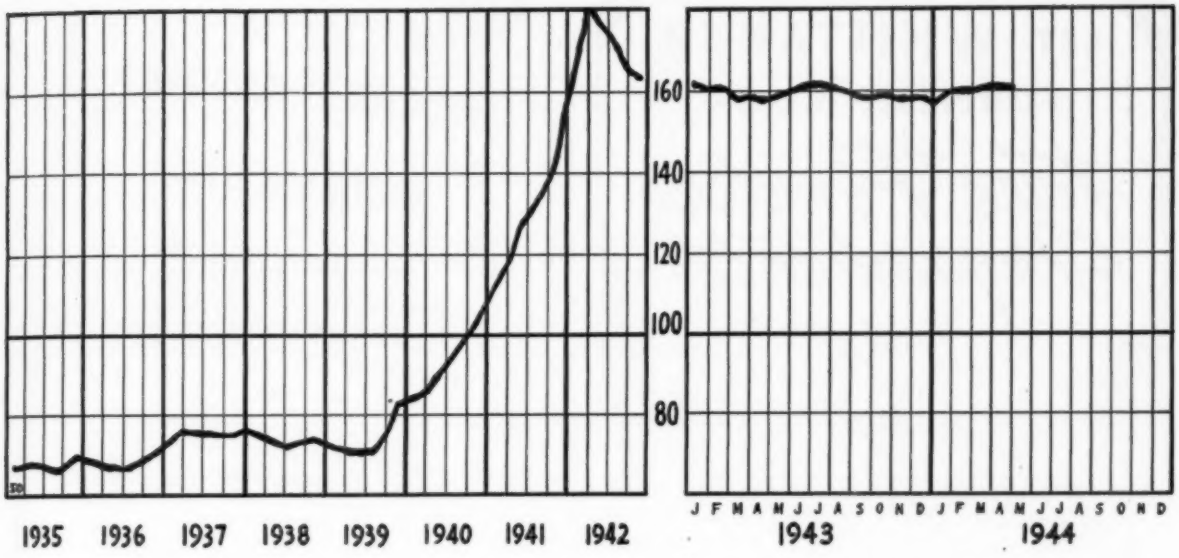
50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for April, 1944, declined to 160.6 from the previous 161.2.

Peppermint Oil Production Set at 1,500,000 Pounds; Excessive Rains and Labor Indicate Small Crop

Reports on the peppermint oil situation indicate that the recent increase in ceiling price will help increase the acreage to some extent. At least efforts are being made to increase production in 1944. While 1942 production was 1,435,000 pounds, a goal of 1,500,000 pounds has been set for this year.

The proposed production figure, of course, will depend to a large extent on weather conditions, and if hand labor is available. Early reports indicate that excess moisture may be destroying the root stock, but it is hoped this situation is not serious.

Another contingency to be faced is the quantity of menthol which will be available from import sources. If sufficient menthol is received from abroad, 1,500,000 pounds of peppermint oil should be sufficient for domestic requirements and for lend-lease use. If menthol imports are not satisfactory, some of the above stated production of peppermint oil must be allocated for menthol extraction and the situation will be somewhat tight.

Menthol from China and Japan will most likely be unavailable in the predictable future. It is also unlikely that Russia will plant peppermint oil in the Ukraine this year as common sense would indicate that all available land there be planted to food. This leaves Brazil as the only possibility of relief for domestic peppermint oil as a source of natural menthol.

FINE CHEMICALS

(*Continued from page 591*)

to approved institutions until such time as production reaches the point of full and free supplies being available for all.

There appears to be a ready demand for any tartaric acid offered in the open market. The cream is also in a tight position with inquiries tending to create considerable excitement about the trade.

Glycerin Free

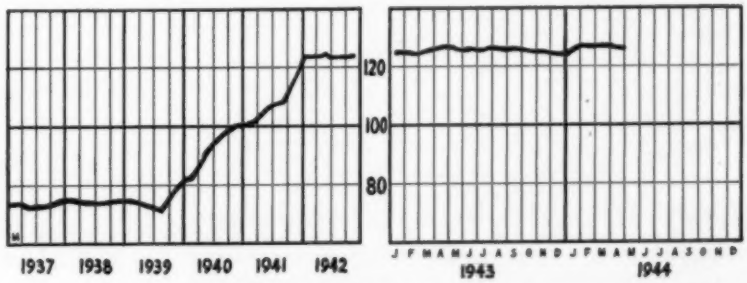
Glycerin is now free from allocation and limited orders. There seems to be sufficient glycerin for requirements now in sight and the suspension of allocation is due to continue through April, May and June.

Fish Liver Oils

The outlook for 1944 stocks of fish-liver oils is bad. Unless there is a prompt increase in the supply of livers for processing there will be a tremendous shortage of liver oil this coming season. Atropine sulfate was reduced. Quotations prevail at $7.75 to $8.15 per pound. The shortage in this item has been definitely eliminated.

Caffeine still continues on the scarce list. Domestic production, however, has been at peak production and Brazil has also been supplying substantial quantities. Emetine is also being produced in Brazil. About 200 kilos of material have already been secured from there.

15 Medicinal Chemicals—Weighted Price Index 1926=100.



The medicinal chemical index dropped to 127.4 from the previous 128.0 This was occasioned by a decline in mercury to $125 from $128 a flask.

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BOTANICALS

Although demand for botanical drugs in the local market during the trading period under review was not particularly heavy, each inquiry again emphasized the fact that stocks have rarely been so low as they are now. Indications are that primary market sources are aware of the situation and have taken every opportunity to push prices higher. Regardless of what dealers have offered to pay at the source, it is virtually certain that total collections this year will be well under normal, and that prices to manufacturing consumers are bound to rise.

Pepper Seizure

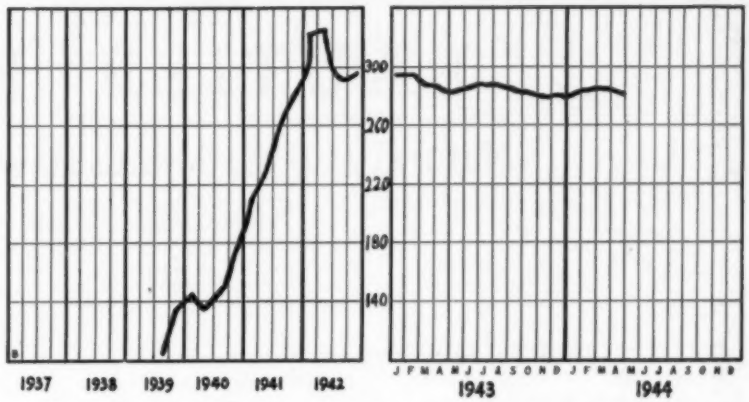
Widely discussed in the spot market was the possible effect of a suit by holders to restrain Federal agencies from commandeering 6,500,000 pounds of black pepper which the government contends is necessary for defense. The plaintiff held that seizure would be illegal because pepper is not needed for defense and that all army and navy requirements are covered. While pepper is not important to this industry, the issue is far wider in that, if the government can cammandeer or seize this commodity, it is then contended that the government can seize anything from one civilian for another whenever they want it on the pretext that the seizure is necessary to national defense.

Gums

A group of gums, namely arabic, karaya, and tragacanth, moved into a position of prominence. Arabic and karaya importers are faced with difficult transportation problems. In the case of arabic, this was occasioned by the opening of the Mediterranean which diverted shipping space elsewhere. While more shipping is available for transportation of karaya from India, it is understood that textile requirements placed an exceptionally heavy demand on the supply there.

A situation opposite to that of arabic and karaya has developed in the gum tragacanth market. Quotations are lower and the market generally seems highly upset by the various qualities offered. There is a tremendous quantity of material in this market. In fact some trade factors state that there is sufficient ribbon gum to meet total requirements for at least two years based on the current rate of consumption. Current prices for No. 1 gum tragacanth ranged from $1.00 to $4.25 a pound, with No. 2 gum at a range of from $3.75 to $4.00. These prices are said to be below current replacement cost.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index declined to 277.8 from the previous 282.6 This was occasioned by a drop in aloes amounting to 5 cents a pound.

Waxes

The arrival of 706 bags of beeswax aided in the matter of supply only to a moderate extent. The market could use substantially more than shipping and quotas provide for this market. No arrivals of carnauba wax were reported and the market continued bare of supplies as demand has absorbed all of the recent arrivals. Candelilla wax continued firm and subject to reasonable activity.

Sarsaparilla Higher

Because of the increasing difficulty in obtaining replacements of sarsaparilla root from Mexico, the price has risen to a new range of from 20c to 22c per pound. Late sales of arnica flowers have absorbed virtually all of the cheaper lots in the market, and the price has risen to $3.40 a pound for the remaining small lots on spot. It is understood that new crop flowers are being quoted this month at a price of about $3.10 per pound for August delivery if crops are up to expectations.

Colombo root was higher at 18c a pound; gum aloes, cape rose to 32c; sabadilla seed jumped up to 34c, and Spanish saffron advanced $2 a pound to a new level at $47; sassafras bark was higher at 75c. Hungarian type chamomile flowers declined to 50c; powdered henna was easier at 23c; and rosemary leaves were lowered to 80c.

Ipecac Yield

Yield of ipecac root in the State of Mato Grosso, Brazil, probably will be reduced this year to 75 per cent of last year's crop, which grossed about 55 tons.

Ipecac is a creeping plant. Because of the scarcity of rainfall last year, the ground is not humid and soft enough for easy gathering of the roots. To obtain the roots, the plant is pulled out of the ground and the roots are broken off. The plant is then put back into the ground, and, by the next year, roots are again ready for harvesting. In Mato Grosso harvesting is limited to the period from December to May.

The roots of ipecac are dried and used in a preparation for treating amoebic dysentery.

Ipecac from Mato Grosso is reported to contain from 1,550 grams to 1,600 grams of emetine and 2,250 grams of alkaloids.

Vanilla Beans

Bourbon vanilla beans are reported to have left the primary market destined for the United States. The route, however, will be long and devious, and there is no one in the spot market willing to predict date of arrival here. Meanwhile there is not much Bourbon vanilla unsold on this market, nor is there a surplus of Mexican beans here.

Because of increased plantings of vanilla in French Oceania during 1941 and 1942, the 1944 crop is expected to be much larger than in 1943. It is estimated that about 150 tons will be harvested in 1944.

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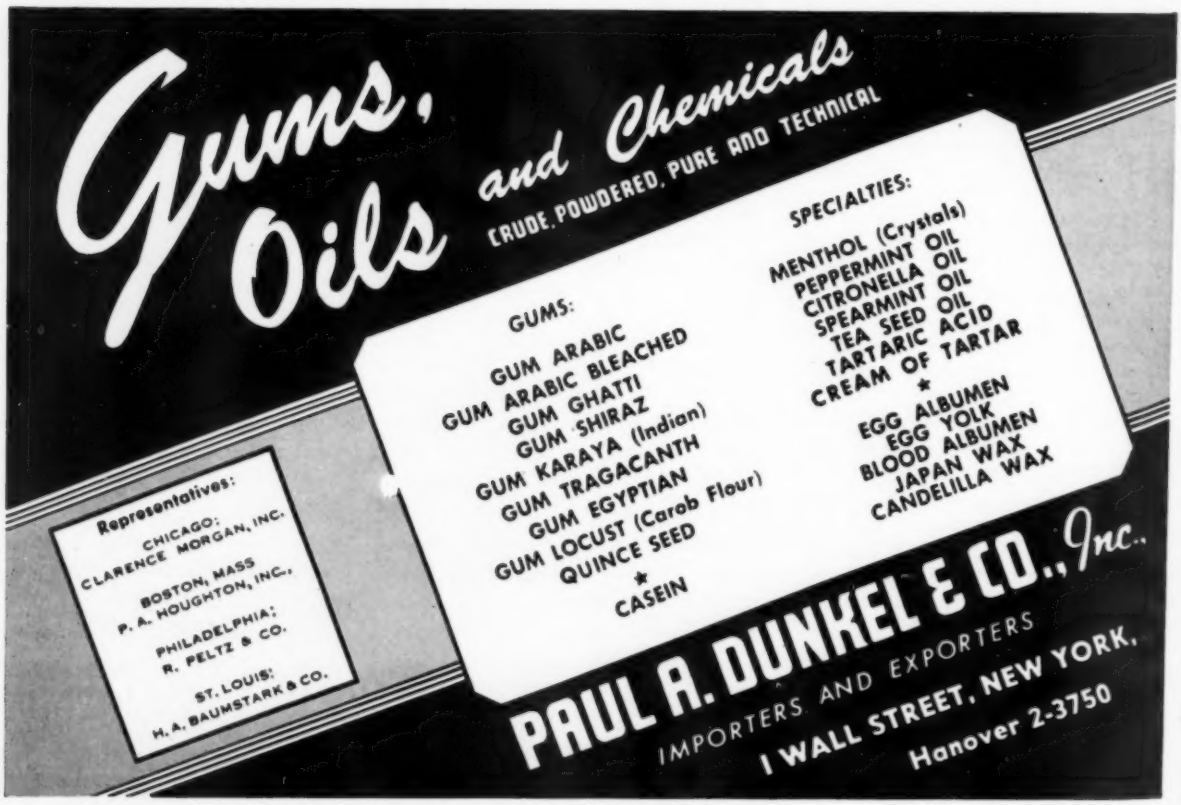


Vanilla Beans

Prices paid for cured vanilla beans in Papeete, Society Islands during 1943 were notably lower than in 1942. Especially high prices were paid in 1941 and most of 1942 because Madagascar vanilla was not on the market.

Exporters estimate the carry-over for 1943 at approximately 40 tons. The Government of French Oceania stated early in January that there was less than 1 ton ready for export. However, that meant actually weighed at the customs house, and did not take into consideration the amounts held by the exporter but not yet weighed in.

Castor Beans

A castor-bean-crushing plant went into operation in Cuba in the middle of 1943. It has an annual capacity of 5,500,000 pounds of castor oil, which is considerably in excess of estimated domestic requirements of 1,500,000 pounds. Actual production in 1944 is expected to be between 2,000,000 and 2,500,000 pounds. Two consecutive operations are involved, the first a hydraulic mechanical pressing which yields a cold-pressed oil suitable for medicinal purposes, the second a solvent extraction which produces from the residue an oil whose higher resin content restricts it to industrial use. Total oil yield is said to be 42 per cent of the weight of the castor-bean.

ESSENTIAL OILS

Demand for essential oils and aromatic chemicals continued active and strong throughout the trading period under review. Stocks of practically all commodities are short and many requests had to be filled from substitute materials. Considerable price activity was noted including an Office of Price Administration specific dollars and cents price ceiling on cedarleaf and spruce oils. Other changes were more or less the result of fluctuating conditions in the fields of demand and competition. Changes noted were advances in the spot price of cedar leaf oil, citral, clove, oil, lemon grass oil, rue oil, and spruce oil. Declines were recorded in almond oil sweet, apricot kernel oil, bay oil, cardamom oil, and citronella oil Ceylon.

Citrus Oils

A very tight situation has developed in domestic citrus oils. Distributors of the California oil, particularly lemon, are behind on deliveries and are unable to accept new business. Florida orange oil is strong and active. The yield from the new crop is not as good as anticipated. Brazilian orange oil, which only a year ago had brought about much competition in the local market, now holds a promise of bringing some relief to the present tight position here.

There is also a well defined possibility that relief will be forthcoming from another source. Immediate steps are being taken by the Federal government to meet the growing shortage of lemon and bergamot oils through a program of dividing up the available supplies of these oils in the reconquered Italian territory between the United Nations that will assure supplies of the oils reaching the United States in the near future. No definite quantities are specified, nor is a definite date of arrival indicated.

Bois de Rose

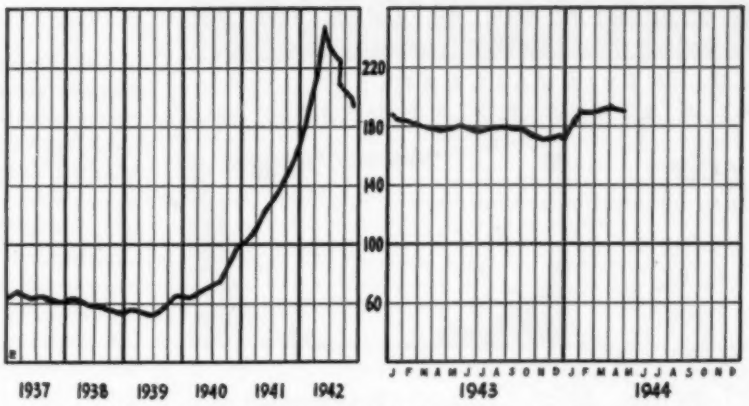
Since the major portion of the bois de rose oil that arrived about a month ago is reported to have been converted into derivatives, major suppliers of the oil are now holding for better prices, explaining that they are only in a position to sell very limited quantities. Spot price is firm at from $3.90 to $4.50 per pound. Another lot of bois de rose oil will arrive here within the next thirty days. The shipment will be about half the size of the first arrival early in March, which amounted to 480,000 pounds. The latest shipment, it is explained, will be the last for some time to come since none is being produced in Brazil.

Cedarleaf Ceiling

A ceiling of $2.25 for producers' sales of cedarleaf and spruce oils and dealers' ceilings of $2.65 to $3.34 per pound became effective April 24th.

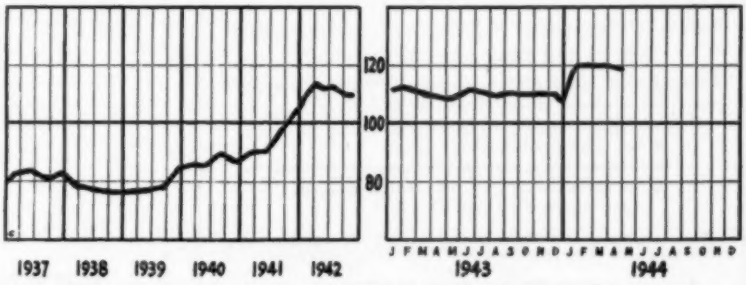
Despite reports concerning purchases of rose oil, geranium, jasmine and neroli, essential oils produced in Algeria, trade factors here state that they will be more inclined to believe that such articles will again be available in this market when they actually arrive.

15 Essential Oils—Weighted Price Index. 1926=100.



The essential oil index declined to 186.3 from the previous 186.7. Citronella Ceylon dropped to 95 cents. Clove oil advanced 5 cents a pound to $1.60.

25 Cosmetic Raw Materials—Unweighted Price Index. 1926=100.



The cosmetic raw materials index declined to 112.6 from the previous 114.3. Tragacanth gum #1 was much lower at $4.

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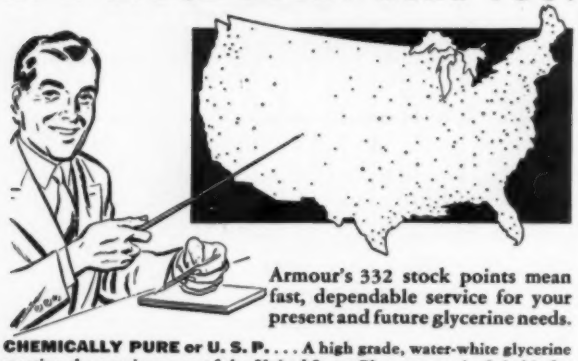

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Surplus Disposal

(*Continued from page 527*)

be that surplus property should be sold or otherwise disposed of expeditiously but on such terms that the government will realize "a fair return," taking into account not only the original cost but also the present condition of the property and the use that can be made of it. This test would prevent improvident sales, he said, and at the same time it would not permit an administrator to refuse to sell to a private business man because the administrator thinks that the activities of that business man would result in price competition.

However, there might be other ways of working off very large quantities of surplus materials, particularly in the case of surplus drug products. One of these methods is to consume these drugs in projects in which the Government might be interested when the European war ends, or when the entire war ends. The purposes for which drug products could then still be used are the United Nations Relief and Rehabilitation Administration in its foreign program, the China relief, and Government agencies such as the Veterans Administration and others. The surplus of drug supplies available could easily be consumed in the rehabilitation of the health of the people of the oppressed countries of Europe and Asia when the war ends. Such a use of these products would immediately solve the problem that will face the drug manufacturers when the war is over. Similar use might be made of surpluses of products of other industries, thus avoiding a demoralization of industry in this country. The one thing that must be watched in this type of disposal of surpluses is that the products are used in the countries to which they are sent for the purposes intended, and not used by these countries for export trade. It will be recalled that following the last war, some of the products left by our Armed Forces abroad were afterwards exported to this country to compete with the very manufacturers who produced the goods. And prices did not concern these exporters of American goods to America since they had obtained the goods for little or nothing.

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Geranium Oil

(Continued from page 536)

brought to the colony by those interested in its propagation.

Although many of the constituents which have been isolated from this oil are identical to those common to the distillates of Algeria and Reunion, nevertheless the odor of the Mawah variety is quite harsh and is not as useful from a perfume standpoint when compared with these distillates. The odor resembles a mixture of equal parts of Reunion oil and that obtained from Motiagrass (*Cymbopogon Martini, Staph*) (*Palmarosa*).

TYPICAL ANALYSIS

The oil yield is from 0.08 to 0.16 per cent.

Sp. Gr. 15°C.	.8900—.8952
O.R. 15°C.	– 14°30′ to – 17°20′
Ref. Ind. 20°C.	1.4693—1.4720
Sol. 70% (C_2H_5OH)	2.2 vol.+
E.V.	22—28
A.V.	1.4—9.1
E.V. after acetylation	208.5—217
Esters as Geranyl tiglinate	9.27% to 11.80%
Total alcohol equivalent calculated as ($C_{10}H_{18}O$)	67.96%—71.28%

Boiling Range, 760 m.m.; 216-219°C., 0%; 219-224°C., 21%; 224-234°C., 39%; 234-242°C., 15%; 242-250°C., 6%; 250-258°C., 4%; 258-266°C., 2%; 266-274°C., 4%; 274-278°C., 4%; above 278°C., 5%.

The Rhodinol prepared and purified in the usual manner from the oil was very harsh in odor and not as useful as that obtained from the Reunion product.

The progressive oil yield (from *P. graveolens*) per annum in kilograms per hectare was 1st year, 10-18; 2nd year, 30-35; 3rd year, 30-32; 4th year, 25-27; 5th year, 20-25; 6th year, 15-20; 7th year, 6-12; 8th year, 5-11. During the second and third year, the quantity of oil obtained appeared to reach the maximum, each year thereafter showing a decline. The quality of the collections during the fourth to the seventh season did not, however, differ materially from that distilled from the first year plantings of the same year harvest.

U. S. IMPORTS OIL GERANIUM

(pounds avoirdupois)

Year	*Algeria and Tunisia*	*Other French Colonies (Reunion)*	*Russia*	*British East Africa*	*Morocco*	*Belgian Congo*
1931	23,697	3,761	....	17,672	....	....
1932	27,483	882	2,205	8,570	....	....
1933	11,243	22,791	15,308	5,795	....	....
1934	7,526	46,770	....	7,565	....	....
1935	25,172	34,813	....	7,089	....	....
1936	25,906	38,430	....	7,505	....	....
1937	17,661	47,036	....	7,698	....	....
1938	9,344	80,360	....	13,865	....	....
1939	66,139	125,001	....	7,260	....	....
1940	27,043	108,420	220	4,513	687	2,090
*1941	6,530	5,449	....	100	410	1,100

*Representing 9 months.

CHEMICAL COMPOSITION

Dimethyl sulfide
Phenylethyl alcohol
b—Phellandrene
l—a Pinene
l—Iso Menthone
l—Linalool
a—Terpineol
l—Citronellol
——————> Rhodinol
Geraniol
Stearopten

Acids:—
free or combined as esters
Formic
Acetic
Butyric
Tiglic
Valeric
Propionic

LABORATORY STUDIES

Stearopten:

In nearly all samples examined, those of Algerian and Russian origin contained much higher quantities percentagewise of this substance than the Reunion distillate.

Valeric Acid

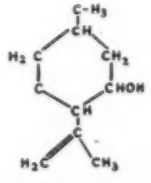
Although reference has been made as to the presence of this acid both free and combined as esters in Russian and Algerian oil, the writer has not been successful in identifying it in these distillates.

Positive results were obtained however in the fatty acid mixtures split from the aqueous alkaline liquor separated after saponifying the Reunion distillate.

Coloring Matter

Traces of a brilliant unidentified blue coloring matter was isolated in an impure form from several lots of Reunion oil. A number of attempts have been made to determine the presence of it in Russian and Algerian oils, without success.

Iso Pulegol: ($C_{10}H_{18}O$)



A trace of this alcohol was isolated from fractions of several specimens of Reunion geranium oil. Identification has also been accomplished in the Rhodinol portions prepared from ther samples.

Fractions of the oil boiling between 90 and 95°C. at 14 mm. were carefully oxidized; the treated oil being purified by steam and subsequent distillation in a vacuo. Separate portions of the collected fraction were treated with Hydroxylamine and Semicarbizide in the usual manner.

M.P. of oxime	121.2°C.
M.P. of semicarbizone	171.7°C.

In no instance was pulegone or its isomer, iso pulegone found in the ketone portions of the original oil. Several samples of Russian and Algerian oils, gave negative results in attempts to identify isopulegol either in the

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fraction of the original oil or in the Rhodinol portion examined.

It is expected that further studies on this subject will be made as soon as new and authentic specimens of Reunion oil are available.

Formic Acid:

The writer has confirmed the findings of Behal[10] and of Dodge in the isolation of a relatively high percentage of combined formic acid in geranium distillates. The investigation was carried out on the water soluble fatty acid liquor which resulted after the aqueous alkaline portion from the saponification of the oil had been acidified and freed from the water insoluble fatty acids.

The method making use of mercuric acetate as outlined by Dodge in his investigation, was used for the separation and identification of the acid.

Oil Source	*Total Esters as Geranyl Tiglinate*	*Formic Acid Found as Geranyl Formate*
Mawah	10.94	3.02
Mawah	11.85	3.10
Algerian	30.10	6.49
Algerian	29.20	7.01
Reunion	30.64	9.17
Reunion	30.10	9.94
Russian	29.70	6.53
Russian	30.20	6.97

Age and Storage:

The effect of age and storage on Geranium Oil is quite marked. Samples of specimens of the Reunion and Algerian distillates were subjected to storage in brown glass bottles under common conditions and room temperature. The analysis of the samples of the oil tested as they arrived from source were as follows:

	Reunion	*Algerian*
Sp. gr. 15°C.	.8901	0.899
O.R. 15°C.	11°50′	−9°2′
A.V.	2.8	2.1
E.V.	72	70.1
E.V. after acetylation	214	222
Sol. 70% C_2H_5OH	2.6 Vols.	2.8 Vols. slightly opalescent in 7 vols.
Appearance	Clear	Clear
Viscosity (23.5°)	1.306	1.358
Color	Medium grass green	Yellow
N.V.M. (comparative)	5.9	8.2
Odor	Characteristic	Characteristic

Sample No. 3—Reunion Oil stored in amber bottles—Full
Sample No. 4— " " " " " " —½ Full
Sample No. 5—Algerian " " " " " —Full
Sample No. 6— " " " " " " —½ Full

	No. 3	*No. 4*	*No. 5*	*No. 6*
Sp. gr. 15°C.	.8934	.8962	.9021	.9067
O.R. 15°C.	−10°39′	−10°20′	−9°0′	−8°2′
A.V.	6.8	10.20	5.1	10.9
E.V.	75.4	82.9	79.1	83.3
E.V. after acetylation	207	203	208	209.4
Sol. 70% C_2H_5OH	3.2 V.S. opal in add.	3.5 opal in add.	3.5 Sl. opal in add.	4.1 opal in add.
Appearance	Clear	Sl. opal	Clear	Sl. opal
Viscosity	1.389	1.419	1.401	1.494
Color	Light greenish yellow	Yellow with sl. gray green	Yellow	Brownish-yellow
N.V.M. (comparative)	7.02	9.2	10.59	13.40
Odor	Sl. acid	Sl. acid & resinous	Sl. acid	Sl. acid & resinous

LITERATURE AND NOTES

1. L' agronomie coloniale 385 (1929) 18.
2. Bulletin de l'office du Government de Algiers. 12 (1906) 277.
3. High yields are common for 1 to 2 years on lands which have not heretofore been under cultivation.
4. 1 hectare—2.47 acres.
5. Parfums Moderne 30 (1935) 198.
6. Chemical Trades Journal from Chemical Industries 855 (1929) 52
7. Includes some Morrocan distillate.
8. Includes some Belgian Congo distillate.
9. 1 Kilo—2.2046 lbs avoir.
10. Bull. Soc. Chem. (1914) 306.

Sex Hormone Creams

(*Continued from page 529*)

As early as 1936, Stafford[30] noted that when estradiol benzoate is employed in a hormone cream, much higher dosages are required than when estrone is used. This has been confirmed by studies of Deanesly and Parker.[31] They found that free estradiol gave excellent local results as shown by the feather response on capons. The application of estradiol benzoate led to similar responses, but the findings showed it to be less effective by inunction.

In studying the local effects of estrogen, Emmons[9] made a comparison of the action of the natural hormone, estradiol, and the synthetic preparation, diethylstilbestrol. He noted that inunction of diethylstilbestrol produced effects similar to those obtained with the natural hormone, but even three times as much of the synthetic product did not give extensive feminization of capons' feather growth. This inefficiency was attributed to the slow absorption of diethylstilbestrol.

More recently, Poth and Kaliski[32] employed estrogen therapy in the treatment of tinia capitis. Medication was given both orally and by inunction in most cases. No significant difference in the effect of estrone and diethylstilbestrol was noted, the time of healing and tolerance to the drug being practically the same for both preparations. Of course, the fact that the agents were also given by mouth precludes a true comparison of purely local effects by the use of ointments.

As previously indicated, the amount of estrogen employed in a cosmetic cream will be a prime factor in its efficacy and in its local action. The concensus of scientific opinion,[10,33] based upon experimental evidence, is that the quantity must be small; clearly below the threshold for systemic results. The amount of hormone actually employed will vary slightly with the type of preparation employed, but the quantities required are far less than those recommended by earlier workers. Malisoff,[34] for example, suggests the use of only 0.5 per cent of "hormone oil."

As is so often the case, the most suitable cosmetic vehicle for estrogen is still a moot question. Most early writers recommended oily or fatty bases. Parker,[35] chiefly interested in systemic effects of estrogen, noted that unction of an oily or fatty substance tends to increase the duration of action of hormones, but the method is not efficient (for systemic results) except where the responding structure is superficial and can be treated directly.

In his discussion of suitable vehicles, Emmons[9] remarked that it seemed possible that an oily or fatty base retains the active material in the skin for a relatively long period and that a more pronounced local but less pronounced systemic activity might result. This, however, was not borne out in his experiments in which estrogen in various vehicles were tested to determine their efficiency in producing feminization of capon breast feathers. Thus, in ether and alcohol,

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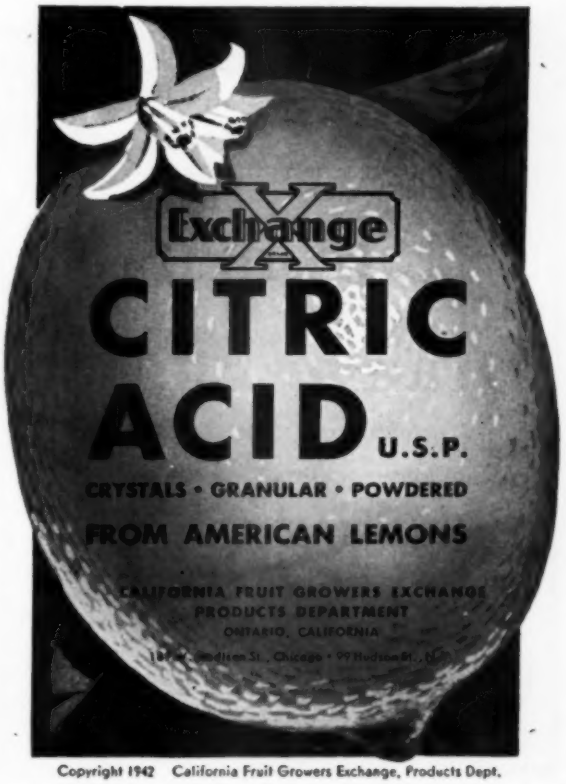

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estradiol produced about equal degrees of feminization. With benzene a less extensive feminization occurred and an even slighter effect with nut oil. Lanolin as a solvent resulted in a mere trace of feminization on occasional feathers.

Organic solvents are hardly applicable in cosmetic products, nor can one overlook the fact that Emmons employed individual substances as vehicles. Their use in combination might have yielded different results.

Most modern sex hormone cosmetics are of the emulsion cream type. Hence the investigations of Sakanone[36] with respect to the efficacy of such creams are definitely pertinent. His comparison of the amounts of crystalline follicular hormone absorbed percutaneously from an oil-in-water emulsion, a water-in-oil emulsion and a simple fat and oil mixture of the estrogenic hormone revealed that the minimol effective dose was slightly smaller in the water-in-oil type of emulsion, although the difference was not large. However, it could not be stated definitely that an emulsion is better than a fat and oil mixture for the percutaneous absorption of the female sex hormone. It was noted that the less active component of the emulsion does not disturb greatly the percutaneous absorption of the estrogen.

Male sex hormones, the androgens, also have a potential role in sex hormone cosmetics. In a general way the investigations with the male sex hormones have paralleled those made with estrogens. First there was established the fact that the androgens can be absorbed percutaneously to produce typical male hormone effects, then the employment of androgen-containing ointments and creams for clinical use in the treatment of endocrine deficiencies, and finally their employment in treating dermatological conditions.

Many studies have proved that androgens can be absorbed from locally applied ointments.[9, 19, 27] For example, Moore and his associates,[4] in their experiments, established that androgens applied as ointments not only produced typical systemic effects, but also showed that ordinary testosterone is more effective than the proportionate when these substances are applied as ointments on the skin. Moreover, there was good evidence of the greater effectiveness of the androgen, testosterone when applied to the skin as an ointment than when injected subcutaneously in small quantities of sesame oil. It was also made evident that the recognized effective superiority of the propionate over the free hormone, when given subcutaneously, was reversed when application was made by means of an ointment.

Some years earlier, Fussganger,[38] in Europe, produced growth of the comb in capons by the topical application of the androgen, androsterone. He found that the effective dose was one-fiftieth of that required by the injection route.

Clinical application of such means for providing androgen has verified the efficacy of percutaneous administration. Kearns,[39] for one, found that in castrated patients and those with hypogonadism due to cryptorchidism, the administration of testosterone brings

about effective substitution for the deficiency. Beneficial results were obtained by intramuscular injections of testosterone propionate, but equally good results were produced through the inunction method with free testosterone. In his work, the androgen was applied in a greaseless base.

Androgens have also been employed in the treatment of skin disorders. One dermatologist,[17] in treating acne in men, employed an ointment containing 1 mg. testosterone propionate per gram. The cases reported were cured in from two to five months.

Perhaps one of the most indicative statements with regard to the use of androgens in treating the skin appears in the recent paper by Marinus:[40] "With advancing age and the appearance of general senility one frequently sees trophic changes in the skin. Such trophic changes are occasionally seen in younger individuals with other senile manifestations. Recent observations on the administration of male hormones for the relief of the functional disturbances associated with the male climacteric and milder degrees of prostatism, indicate an improvement in the skin following its use. The skin becomes thicker, less dry and wrinkled, and there is a definite relief of "winter pruritus." Small amounts of male hormone may be used with advantage, therefore, in thin, dry, itchy skin seen in elderly people whether male or female. This may be applied as an ointment or as the methyl ester of the hormone by mouth. The quantity needed is small and the results are extremely gratifying to the patient."

With male sex hormones, as with female sex hormone cosmetics, formulation must result only after extensive study, consultation and testing. In the case of androgens, considerable pioneering may be needed inasmuch as this field does not appear to have had such extensive investigation as estrogen-containing cosmetics.

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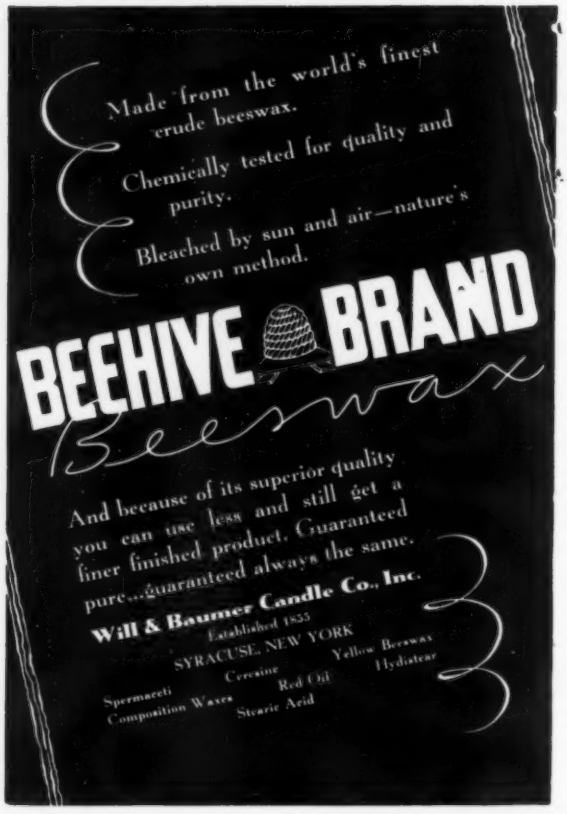
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Control of Cosmetics

(*Continued from page 537*)

appear at any "reasonable time" it behooves the manufacturer to make sure his laboratories are spick-and-span at all times.

After the preparation has been manufactured, there are two very important conditions to be considered, first, its shelf life, and second, whether it produces the effects claimed on the label. As stated elsewhere in this article, the first condition is somewhat of a headache to the manufacturer who may be compelled to use substitute materials that have not had sufficient use in his formula to determine how long the preparation will keep under all sorts of storage conditions. Hence the necessity of long investigations before using these materials. Only the manufacturer himself can decide which is the lesser evil, temporarily to withdraw his product from the market, or to "take a chance" that he won't have to take back quantities of spoiled or deteriorated goods.

It is assumed that before offering the preparation to the public, sufficient investigation has been made to substantiate the claims that appear upon the label, and in this connection a really meritorious product does not require an exaggerated "build-up" to make it sell. Carefully chosen words, without bombast or ballyhoo, will do more to establish the integrity of a product than a lot of meaningless phrases or unprovable inferences that may eventually get the producer into difficulties with constituted authorities. A good rule to follow is: if your claims cannot be proven by scientific tests, or by the "concensus of modern medical opinion" don't use them.

Heat Disorders

(*Continued from page 533*)

climates and receiving an adequate supply of water they require 2 Gm. of salt per hour of work and 0.5 Gm. per hour of rest. Acclimatized men doing sedentary work need 12 Gm. daily and those doing hard work for eight hours per day require 24 Gm. of salt.

Part of this salt need is provided in the diet, but with most persons salt losses in sweat must be made up by added intake. A physiologically sound way to provide this need is to add salt to the drinking water so as to make a final concentration of 0.1 per cent. A solution of this low concentration is said to have only a slight saline taste when cooled and allays rather than promotes the sensation of thirst.[3] However, when working with navy men in tropical zones, Flattery[16] found that some sailors bitterly resented the addition of salt to the drinking water. He therefore instituted the practice that every man on the ship should take ½ teaspoon of salt in water twice a day. No ill effects due to heat occurred when this routine was faithfully carried out.

A much more convenient way to supply salt is in the form of tablets. Talbott[3] suggests that a 1 Gm. tablet

may be taken with each half liter of water or a 0.5 Gm. tablet with each cup of water. Even if sweating is not excessive, sedentary workers will benefit from an increased salt intake during hot weather. Dispensers for these tablets near the water supply encourage their use, provided the worker knows the benefits to be derived from their use. Millions of men in the armed forces, especially those trained in the Southwest, already know the value of salt tablets in hot weather and their knowledge has already begun to be disseminated to the general public.

Newer work indicates that salt depletion may not be the sole factor in heat disease and other debilitating conditions associated with high environmental temperatures. Dextrose, for example, is frequently combined with salt in the manufacture of tablets on the assumption that the sugar provides a quick-energy source and that it is of value in combating shock associated with heat exhaustion.[15] Although there is no complete agreement as to the role of sugar in heat disease, Baetjer[6] reports that the incidence of heat exhaustion in industrial workers has been greatly reduced since salt or salt and sugar tablets have been provided. Others[6] have maintained that the use of glucose in candy form has been effective in preventing heat exhaustion.[17]

Considerable interest has been focused on the relationship between excessive perspiration and water-soluble vitamin losses.[18, 19] Vitamin C has sometimes been recommended in the preventive treatment of heat exhaustion and heat cramps.[20] A report from the medical division of one of the nation's largest industrial organizations indicates that tablets combining vitamin C and salt are superior to salt alone in cases of profuse sweating. Hence, suggest Cornbleet and his associates[19], it is possible that other vitamins might also be helpful under similar conditions.

Because the B vitamins, more especially thiamine, are intimately associated with the physiology of combustion, considerable attention has been centered around these dietary essentials. As Mills[1] points out, with the lowered food intake of hot climates or during summer heat it may well be that a higher dietary content of thiamine and other combustion catalysts of the vitamin B group is needed to maintain an optimal concentration for proper tissue oxidative processes. Indeed this has been borne out by studies which show that the optimal requirement for thiamine is twice as high at 91° F. as it is at 65° F. Animal work has demonstrated that the need for thiamine in the heat may be more than double the quantity required in a cool environment. Other factors of the B complex were found to be badly needed at elevated temperatures, but seemed to make little difference at lower environmental temperatures.

Carefully controlled studies on B vitamin losses in sweat showed that significant quantities may be lost via this route. Basing their estimates on the average American diet, Cornbleet, Kirch and Bergeim[19] found that the percentage losses in heat sweat is 10 per cent

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for thiamine, 5 per cent for riboflavin and 1 per cent for nicotinic acid. "The excretion of such amounts of these vitamins," they noted, "cannot be said to be negligible from the physiological standpoint although perhaps becoming of real importance only in case of rather profuse sweating or on diets low in these vitamins."

Although this phase of heat disorder prophylaxis requires further study, it does appear that the inclusion of such vitamins is a quite logical procedure in the manufacture of preparations that help to prevent these diseases. One pharmaceutical organization, working along these lines has put out a tablet, for use during hot weather, containing:

Sodium chloride	7 gr.
Dextrose	3 gr.
Thiamine hydrochloride	1 mg.

European workers[20, 21] have studied the value of adrenal cortex extract in the prophylaxis of heat disorders. They found that the parenteral administration of this agent prevents, or at least greatly retards, the development of heat exhaustion and heat stroke because the extract improves the physical heat regulation and stabilizes the circulation. The wider use of adrenal cortex extract is hindered, however, by the fact that it is without this effect when given by mouth.

With the actual occurrence of heat disorders, steps must be taken to relieve the condition. While treatment varies with severity, certain measures are common to all forms of heat disease. According to Fantus,[7] the three fundamental indications in all heat induced disturbances are removal of the victim to the coolest place available, rest in the recumbent position, and the supplying of salt and water.

No discussion of heat disorders can be considered complete without some consideration of heat rash or prickly heat (Miliaria). Considered by most people as mainly an affliction of babies, prickly heat can become a very serious matter during hot humid weather or under conditions of high temperature and moisture. In the tropics, cases of heat rash have been so severe and so frequent as to materially affect military efficiency.[22] At Massawa, during work by naval units repairing Italian drydocks, there was not a single case of heatstroke in the entire group, thanks to suitable precautions. Nonetheless prickly heat kept an average of 25 per cent of the force in the hospital.[23]

From personal experience this author knows that, far from being limited to the tropics, heat rash often is quite incapacitating even in temperate zones. A common cause of much discomfort (in the form of severe itching and stinging) and of partial disability, prickly heat is frequently noted in men working in warm environments.[24, 25] Recognized as due to excessive sweating, one theory holds that the sweat glands get out of order, as it were, because of excessive activity, with the result that the sweat ducts are blocked with congestion and retained secretion. A serious aspect of the condition is the danger of the skin becoming in-

fected. Boils, ulcers and even fungous infections may result.[22]

Scrupulous cleanliness, the avoidance of sweating and the wiping away of sweat as it forms are essential in any treatment of this condition. Soothing lotions and dusting powders are frequently helpful in affording some measure of relief. Tobias[24] recommends the following lotion as often effective when applied at bed time:

Phenol	**1.0 part**
Lime water	**5.0 parts**
Glycerine	**10.0 parts**
Calamine and zinc oxide lotion to make	**100.0 parts**

Phenol-containing compositions, included to relieve itching should be used cautiously on infants and children.[10]

A drying shake lotion, suggested in the military dermatology manual,[25] is as follows:

Zinc oxide	**20.0 Gm.**
Talc	**20.0 Gm.**
Glycerine	**15.0 cc.**
Water	**35.0 cc.**
Alcohol (95%)	**35.0 cc.**

A powder, for use during the day, may be made from:[24]

Camphor	**0.5 part**
Boric acid, powdered	**2.0 parts**
Salicylic acid	**0.5 part**
Powdered talcum, to make	**100.0 parts**

Another simple dusting powder, useful to relieve itching, consists of:[10]

Camphor	**2.0-4.0 Gm.**
Starch	**16.0 Gm.**
Zinc Oxide	**16.0 Gm.**

Where large areas of the body are involved, bran, starch, almond meal or alkaline baths are suggested. Neglect of the condition may lead to more serious complications.

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GUARANTEED REBUILT Cosmetic and Chemical Equipment: 40 gal. Ross Pony Mixer; 50 gal. Monel Jktd. Kettle; Pfaudler 100 gal. glass lined; fully Jktd. Kettle. FIRST MACHINERY CORP. 819-837 E. 9th St., New York 9.

CONVEYORS, DRYERS, FILLERS: Liquid powder, tube; Filters, Kettles, Labelers, Mills, Mixers, Coating Pans, Percolators, Sifters. Tablet Machines, Tanks, etc. Send us your inquiries and a list of your idle equipment. Loeb Equipment Supply Co., 912 North Marshfield Ave., Chicago 22, Ill.

ANNOUNCEMENT: ON MAY 1st, 1944, WE WILL BE LOCATED AT OUR NEW QUARTERS, 225 WEST 34th STREET, NEW YORK 1, N. Y. WE WISH TO THANK YOU FOR YOUR SHARE IN MAKING THIS POSSIBLE. Send for our removal sale circular listing attractive purchases of DRUG AND COSMETIC MACHINERY. BRILL EQUIPMENT COMPANY, 225 WEST 34th STREET, NEW YORK 1, N. Y.

FOR PROMPT SHIPMENT: Colton 3BT Single Punch Tablet Machine; Stokes Rotary B Tablet Machine; Day Mixer 200 lb.; Dry Mixer 84 c.f. capacity; Rotex and Roball Screens 20" x 48" and 40" x 84"; 14 new Portable Agitators ¼, 1/3, ½, ¾ HP, 350 to 1725 RPM; Two new 10 ft. Portable Belt Conveyor Tables; Aluminum Jacketed Kettle, 80 gallons and one 150 gallon with Agitator. Priority restrictions eased on New Stainless Steel Tanks and Jacketed Kettles. Send us your inquiries. MACHINERY & EQUIPMENT CORPORATION OF (N.Y.), 59 East 4th Street, New York 3, N. Y.

FOR SALE: 2—½" & ¾" Single Punch Tablet Machines; Day 8 & 15 Gal. Pony Mixers; Alsop 3 spt. Vac. Bottle Fillers, Copper Jack. Kettles 15 to 150 gal.; 3—Homogenizers, 5, 7½ & 10 HP motors; Double Spiral Mixer 150 gal.; Paste, Powder & Liquid Mixers; Filling Machinery; Kettles & Tanks; Grinders, Crushers & Pulverizers; Sifters & Screens; Pebble & Jar Mills; Stills & Columns; Filters & Filter Presses; Dryers; Centrifuges; Pumps. Send us your inquiries. We buy your surplus equipment. Stein Equipment Company, 426 Broome St., New York 13, N. Y.

2—65 gal. Copper Jacketed Kettle with Stand, 100 lb. Pressure
1—40 gal. Copper Jacketed Mixing Kettle—Gear Drive Stand, Agitator Blades are Brass.
1—C. H. World Vacuum Type Labeler.
1—U. S. Bottlers, 4 Spout Stainless Steel Vac. Filler for Small Bottles.
1—New Porcelain Abbe Hand Operated Ball Pebble Mill 2.5 gal. Cap.
20—New Stainless Steel Storage Tanks, 60-1000 gal. Cap., with Stand & Cover.
3000'—New 12" Wide Skate Wheel Roller Conveyor, 8' & 10' long sections.
Also—Pumps, Mixers, Copper Tanks, 100 gal. Spice Hoppers. Write For Latest Stock List. PERRY EQUIPMENT & SUPPLY CO., 1515 W. Thompson St., Phila., 21, Pa.

Machinery Wanted

HIGHEST PRICES PAID FOR GOOD EQUIPMENT. FIRST MACHINERY CORPORATION, 819-837 East 9th St., New York 9, N. Y.

WANTED: Complete automatic unit for filling and capping, with or without labeling, to handle half dram to one ounce bottles liquid with capacity of fifty thousand units daily. Box 550, DRUG & COSMETIC INDUSTRY.

Help Wanted

EXPERIENCED TABLET COATER. Fast-growing manufacturer of biochemical products, Los Angeles. Write stating experience and salary. Box 563, DRUG & COSMETIC INDUSTRY.

Help Wanted

CANADIAN Pharmaceutical Manufacturer requires Pharmacist with manufacturing training and experience. Excellent opportunity for advancement. In applying, furnish age, draft or selective service status, education, experience, salary required, and photograph. Apply Box 544, DRUG & COSMETIC INDUSTRY.

CHEMICAL ENGINEER: For production work in cosmetic, drug and packaging field. Starting salary $3600. Good post-war future. Location St. Louis. Answers confidential. Box 561, DRUG & COSMETIC INDUSTRY.

CHEMIST to take charge of manufacturing and product control of large cosmetic plant located in New York City. Excellent opportunity for right man. State age, experience, draft status, salary desired in first letter. Replies held in strict confidence. Box 560, DRUG & COSMETIC INDUSTRY.

RESEARCH DIRECTOR BACTERIOLOGY—Old established pharmaceutical manufacturer, in mid-west has immediate opening for bacteriologist with Ph. D. degree and several years experience to direct the work of its bacteriology department. Box 558, DRUG & COSMETIC INDUSTRY.

EXPERIENCED PRACTICAL CHEMIST for cosmetic medicine extract business. Prefer man able to handle production also. Wonderful opportunity with established firm. Moderate salary to start, increase with experience. Box 556, DRUG & COSMETIC INDUSTRY.

Situations Wanted

CHEMICAL ENGINEER, excellent background, thoroughly experienced research formulation manufacture cosmetics, supervising production wishes change position with responsibilities cosmetics allied field. Box 554, DRUG & COSMETIC INDUSTRY.

SALESMAN 31 years old, draft exempt, ten years experience contacting retail drug trade desires connections with reputable cosmetic or drug house in west or southwestern states. A-1 references. Box 555, DRUG & COSMETIC INDUSTRY.

Business Opportunities

WELL-KNOWN English Perfumer wishes to appoint a U. S. agent to handle post war sales. Manufactures include Perfumes, Toilet Waters, Lipstick, Face Powder and Soap, but initial introduction to U. S. Market will probably be for Perfume and Toilet Waters only. Prices are high and lines are not at present known in U. S. although sales in England and other countries are large. Agent must have connection with, and employ salesman calling on, the best class of department store throughout U. S. and should be prepared to purchase goods on credit terms, to handle stock and to dispatch and bill them to his customers. Generous advertising and sampling costs will be borne by the manufacturer. Write complete details of qualifications, organisation and products handled to Box 535, DRUG & COSMETIC INDUSTRY.

MIXING, filling and packaging Powder, Liquid. Large or small batches. Write Othugen Lab. Inc., 259 South St., Newark, 5, N.J.

LET me solve your problems in developing and manufacturing toiletries—creams, lotions, dentifrices, etc. Box 559, DRUG & COSMETIC INDUSTRY.

FOR SALE: Complete Egg Noodle business. Good Machinery. Small space to operate. Good family business. All stores sell noodles. Work for yourself. Box 557, DRUG & COSMETIC INDUSTRY.

NEW PRODUCTS WANTED—Successful 40 year old manufacturing concern with extensive capital and sales outlets wishes to acquire newly invented or approved products. Consumer products preferred . . . patented or made from secret formula. Will not deal through brokers. And, will only consider products that are worthwhile . . . that add to established reputation of the company. Write general information about the product . . . *but do not reveal any secret information.* All replies will be treated in confidence and given careful consideration. Box 553, DRUG & COSMETIC INDUSTRY.

SALES REPRESENTATION—Philadelphia and vicinity. Cosmetic specialties—covering 300 best cosmetic drug stores and chains in this area. 12 years in operation. Box 552, DRUG & COSMETIC INDUSTRY.

EXPERIENCED COSMETICS-MANUFACTURING MAN DESIRES TO TAKE OVER A PLANT OR MANUFACTURING OPERATION. Box 551, DRUG & COSMETIC INDUSTRY.

WANTED TO BUY—all raw materials for manufacturing perfumes including bottles and boxes. Will also purchase perfume companies outright. Give full details. Box 562, DRUG & COSMETIC INDUSTRY.

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